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# Exploring Online Customer Experience: Website Features, Customer Activities, and Repurchase Intentions

Xiangyu Kong

This thesis is submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Industrial and Business Studies

Warwick Business School
The University of Warwick
September 2011

# Brief Contents

# Detailed Contents

# List of Tables

# List of Figures

# Acknowledgement

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Last but not least, I would like to give my special thanks to my fiancée, Li Li, who will soon become my wife. Her understanding and caring at every moment has made this journey much more joyful.

# Declaration

Except for commonly understood and accepted ideas, or where specific reference is made, the work reported in this thesis is my own, and includes nothing that is the outcome of work done in collaboration. No part of this thesis has been previously submitted to any university for any degree, diploma or other qualification.

Xiangyu Kong

Warwick Business School

University of Warwick

September 2011

# Executive Summary

The purpose of this research is to provide a better understanding of customer experience as to how it could be used to contribute to experience-based design in the context of online retail services. The review of literature suggested that a good customer experience may bring various benefits to service organisations. However, many of the existing studies appear to be focused on traditional face-to-face services rather than e-services. Moreover, although it is proposed that services should be designed based on the customer experience, little literature was available to suggest how it could be done.

This research studied three key areas in the online retail service context, the features offered on retail websites, the activities performed by customers, and the customers' perceived influences of each feature on their experience and repurchase intention. Each of these areas was investigated by an individual study using different data collection methods and data sources. Study 1 investigated the retail website features by analysing 60 retail websites. Study 2 enquired the online customer activities by interviewing 52 university students. Study 3 researched each retail website feature's perceived influences on customer experience and repurchase intention by surveying 1680 university students and 233 customers of an online retailer. The studies identified twenty retail website features (e.g. search box, filter, and express checkout), four online customer activities (i.e. Search, Compare, Checkout, and Enquiry), and provided evidence which demonstrated a correlation between customer experience and repurchase intention.

By performing a Principle Component Analysis on data collected in Study 3, it was found that some of the retail website features appear to influence customer

experience (and repurchase intention) in similar ways. In order to identify the similarities of the features with similar influences, analysis was undertaken by linking retail website features with their associated online customer activities.

The result suggested that there are four types of retail website features that appear to influence customer experience (and repurchase intention) differently: i.e. optional automatic features (e.g. enable customers to choose whether or not to save addresses and payment details for future use), non-optional automatic (e.g. automatically suggest alternative or additional products), optional non-automatic features (e.g. enable customers to browse categories), and features involve real person interaction (e.g. enable customers to chat with customer service agent on the website). Although all the four types of features appear to have positive influences on customer experience (and repurchase intention), it seems that the optional non-automatic features have the most positive influences, and the features involves real person interaction have the least positive influences. However, the result showed that there are no clear differences between the influences on customer experience of the optional automatic features and the non-optional automatic features.

This research has provided a new perspective on e-services. It suggested that there are different types of service features that tend to influence customer experience (and repurchase intention) in different ways. It implies that e-services could be more effectively designed by focusing on the features offered on retail websites, in particular by offering optional non-automatic features.

# 1. Introduction

## 1.1. Background

The internet plays an important role in people's lives. According to UKOM (UK Online Measurement, 2010), British people spent 884 million hours online in April 2010, which is 65% more than they did in three years previously. At the same time, shopping online has become increasingly popular in the UK. The average weekly value for Internet retail sales rose from £169.3 million in November 2006 to £593.4 million in November 2010 (Office for National Statistics, 2011), which is over 250% increase in four years (see Figure 1.1). At the same time, the percentage that Internet retail sales in total retail sales in the UK has increased significantly as well. In November 2006, it only accounted for 3% of total retail sales in the UK. After three year, this number increased to 9.5% (Office for National Statistics, 2011, Figure 1.1).

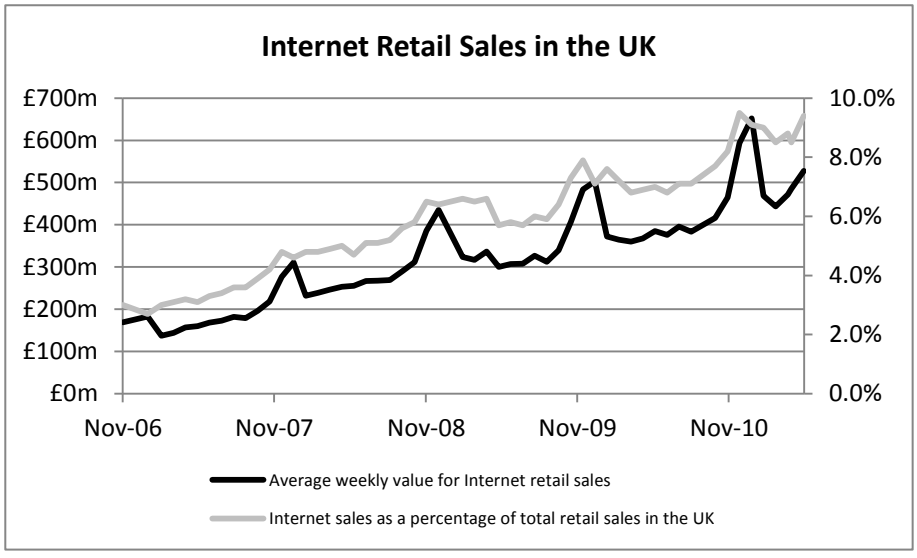



**Figure 1.1 Internet Retail Sales in the UK**

However, compared to the rapid growth of Internet retail, the design of retail websites has barely changed. All retail websites look similar to each other and offer more or less the same features (supported by data presented in Chapter 8). Research on online retail service design is limited (see section 2.3 in Chapter 2). Although many studies are carried out under a broader research area of e-service, most of them appear to have a marketing or technology focus, while a relatively small number of research projects focus on the operations and design of e-service.

In the general service literature, it is suggested that service operations and design should be based on customer experience (Bate and Robert 2006). Efforts have been invested in many relevant topics, such as service quality (Zeithaml *et al.* 2002), customer satisfaction (Grace and O'Cass 2004), customer loyalty (Crosby and Johnson 2006), and the customer experience (Johnston and Kong 2009). However, experience-based design has failed to attract as much research interest as other topics. Although the number of studies in this area seems has taken off in the last a few years, few of these focused on online retail services.

## 1.2. Purpose

In the current literature, a number of attempts have been made by researchers to analyse the customer experience of a small part of e-service, such as e-service recovery (Collier and Bienstock 2006) and online catalogues (Tateson and Bonsma

2003), or a single-function e-service such as online library systems (Han and Liu 2010). Few studies were found to systematically analyse a more complicated e-service, such as online retail service. This may be partly because the emotional attribute of customer experience and the complexity of technology used in these e-services have created some difficulties.

The purpose of this research is to explore how customer experience may be used to contribute to experience-based design in the context of online retail services.

## 1.3. Conceptual Framework

This research attempts to look at the source of the customer experience, i.e. the features offered on retail websites, and identify the patterns as to how these retail website features influence customer experience and repurchase intention. By understanding the underlying mechanisms, experience-based design of online retail service may be improved. However, in order to provide an incentive for online retail service providers to improve the customer experience of their services, the relationship between customer experience and repurchase intention is also investigated.

The conceptual framework of this research includes the following six elements:

- Online Retail Service Provider – who designs the retail website, or provides

criteria for the design of the retail website;

- Retail Website Feature – what the online retail service provider offers on their website to facilitate and interact with their customers (e.g. keyword search box, categories of products);
- Customer – who visits the retail website, uses the retail website features, and experiences the service;
- Online Customer Activity – a group of a customer's actions that fulfil a need of the customer on the retail website (e.g. actions taken to find a product or to make payment);
- Customer Experience – a customer's emotional evaluation of the service;
- Repurchase Intention – a customer's intention to purchase again from the service provider after the evaluation of the service (includes but not limited to the emotional evaluation).

This conceptual framework suggests the following four relationships:

- Customer experience on a retail website is determined by what a customer wants to do on a retail website (i.e. online customer activity) and what the online retail service provider offer on their retail website (i.e. retail website features).
- A customer performs online customer activities to fulfil his/her needs.
- An online retail service provider designs the retail website or provides criteria

for the design of the retail website to facilitate and interact with their customers, aiming to fulfil the customers' needs.

- A customer's repurchase intention is based on the customer experience he/she receive during the service transaction.

By investigating these elements and their relationships, opportunities can be created to explore how customer experience may contribute to the experience-based design in the context of online retail services.

The conceptual framework is summarises and presented in Figure 1.2. This research is proposed, designed and conducted based on this framework. The details of this research are explained in this thesis.

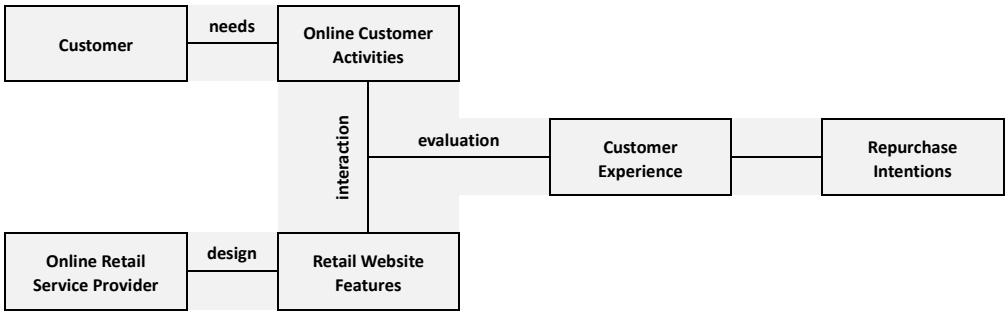



**Figure 1.2 Conceptual Framework**

## 1.4. Thesis Outline

This thesis consists of thirteen chapters.

**Chapter** 1 Introduction

This chapter introduces the background and the purpose of this research, summarises the conceptual framework, and provides an outline of this thesis.

**Chapter** 2 e-Service

This chapter reviews the relevant literature in the context of this research, relating to e-service. It does not aim to cover all the research on e-service, but to focus on a few issues that are relevant to this research. It identifies the gaps and research opportunities, and leads the discussion to the next chapter on customer experience.

**Chapter** 3 Customer Experience

This chapter provides a comprehensive review of the topic of this research, namely customer experience. Gaps in the literature are identified, and opportunities for further research are proposed.

**Chapter** 4 Research Questions

This chapter demonstrates the development of research questions. It shows the initial research questions evolved from the literature review and how they are refined and finalized by carrying out a preliminary study.

**Chapter** 5 Research Paradigms

This chapter discusses the philosophical considerations of this research. The research strategy, ontological considerations, and epistemological issues are visited and discussed.

**Chapter** 6 Research Method

This chapter explains and justifies the research method chosen for this research. It explains why a survey is suitable for this research and what the different types of surveys are.

**Chapter** 7 Research Design

This chapter presents the detailed design of the three individual studies and further analysis. It shows how each proposed research questions are planned to be answered.

**Chapter** 8 Study 1 Retail Website Features

This chapter reports on the results of Study 1 on retail website features. By analysing the data collected from 60 retail websites in the UK, 20 retail website features have been identified.

**Chapter** 9 Study 2 Online Customer Activities

This chapter presents the results of Study 2 on online customer activities. Based on 52 interviews with university students in the UK who regularly shop online, it is found that Search, Compare, Checkout, and Enquire are the four main online customer activities that customers perform on retail websites. In addition, each of the retail website features identified in Study 1 are associated with one of the online customer activities by working with friends and colleagues.

**Chapter 10** Study 3 Customer Experience and Repurchase Intention

This chapter illustrates the results of Study 3 on customer experience and repurchase intention. Survey data were collected from university students as well as customers of an online retailer in the UK. The result shows a significant positive correlation between retail website features' influences on customer experience and repurchase intention.

**Chapter 11** Principle Components Analysis

In order to answer the main research question, a principle component analysis is performed on data collected in Study 3, in order to identify the retail website features that tend to influence customer experience (and repurchase intention) in similar ways. This chapter explains the process of PCA and presents the results of the analysis. Four types of retail website features were identified.

**Chapter 12** Findings and Discussions

This chapter summarises and discusses the findings of this research aiming to answer the main research question. The descriptions of the four types of retail website features are produced, and their influences on customer experience and repurchase intention are compared.

**Chapter 13** Conclusion

This final chapter concludes this research by answering the research questions, summarising this research's contributions to theory and practice, identifying the limitations of this research, and proposing opportunities for future research.

Table 1.1 summarises the structure of this thesis.

| | | | |
|---|---|---|---|
| **Introduction** | 1. Introduction | | |
| **Literature Review** | 2. e-Service | 3. Customer Experience | |
| **Research Questions** | 4. Research Questions | | |
| **Methodologies** | 5. Research Paradigms | 6. Research Method | 7. Research Design |
| **Data Collection and Initial Analysis** | 8. Study 1 Retail Website Features | 9. Study 2 Online Customer Activities | 10. Study 3 Customer Experience and Repurchase Intention |
| **Further Analysis** | 11. Principle Components Analysis | | |
| **Findings** | 12. Findings and Discussions | | |
| **Conclusions** | 13. Conclusion | | |

**Table 1.1 Structure of Thesis**

# 2. e-Service

## 2.1. Introduction

E-service has been defined by many researchers as services delivered through electronic devices (e.g. Boyer *et al.* 2002; Rowley 2006). Some common applications of e-service include mobile phones, ATM machines, vendor machines, library self-checkout systems, and the Internet. Based on these discussions, research on e-service was undertaken on various topics. However, research gaps exist, and are waiting to be filled by future research.

The objective of this chapter is to review the e-service literature relevant to this research, in order to identify the gaps in the current body of knowledge and set the context of this research. The following topics will be covered in this chapter:

- Nature of e-Service, which summarises the definitions, typologies, and conceptual frameworks used in current research;
- e-Service Design, which explores how e-service is designed ;
- e-Service Analyses and Evaluations, which discusses how e-service is evaluated and analysed;
- Customer Experience in e-Service, which focuses on the customer experience research in the e-service area;

- Conclusion, which summarises the gaps and opportunities for future research in the e-service area.

## 2.2. Nature of e-Service

This section reviews the discussions on the nature of e-service in the current literature. It first summaries the definitions of e-service, and proposes a definition to be used in this research. Then, different types of e-services suggested by researchers are reviewed, and the context of the research is located. Finally, it reviews the conceptual frameworks that have guided many studies in e-service, and the focus of this research is set out. Thus, this section proceeds through the following topics:

- Definitions of e-Service;
- Typology of e-Service;
- Conceptual Frameworks.

### 2.2.1. Definitions of e-Service

There appear to be two main streams of definitions of e-service. One suggests that all services delivered through electronic devices and channels should be categorised as e-service. For example, the electronic provision of a service to customers (Saanen *et al.* 1999); the provision of consumers with a superior experience with respect to the interactive flow of information (Santos 2003); the provision of service over electronic networks such as the internet (Hassan *et al.* 2011); deeds, efforts or

performances whose delivery is mediated by information technology (Rowley 2006).

The other argues that e-services should include only services delivered through the Internet, rather than any other electronic devices or channels. For example, all interactive information services that are delivered on the Internet using advanced telecommunications, information and multi-media technologies (Boyer *et al.* 2002); a web-based service delivered through the internet (Surjadjaja *et al.* 2003); any service or functionality that can be accessed by a business or a consumer programmatically on the Internet, using standard representation and protocols (Su *et al.* 2003); and the use of electronic networks and associated technologies via the internet to enable, improve, enhance, transform or invent a business process or system to complete tasks, solve problems, conduct transactions or create value for current or potential customers (Lin *et al.* 2007).

Although there is no generally accepted definition of e-service, it is still interesting to note that there are a few words that appear more frequently than others in the definitions, i.e. interactive, information, technology, electronic, and internet. It seems that all the definitions focus on the comparison between e-service and traditional face-to-face services, and emphasise the new features, which are the nature of service being delivered (interactive, information) and the channel used to deliver service (technology, electronic, and internet).

For the purposes of this research, e-service is defined as 'interactive information service delivered through electronic channel', which includes but not limited to the Internet, mobile network, and information kiosks. Online retail service is a type of e-service using electronic channels to facilitate the delivery of goods or services.

### 2.2.2. Typology of e-Service

Within the defined e-service area, a few frameworks for classifying e-services are proposed by researchers. One popular typology is by the nature of products that an e-service is providing. For example, Voss (2000) came up with a model which sees the e-service sells services (eService) and e-service sells physical goods (eCommerce) as the two ends of a continuum, and suggested that services can be delivered with goods together or alone over the internet (Figure 2.1).

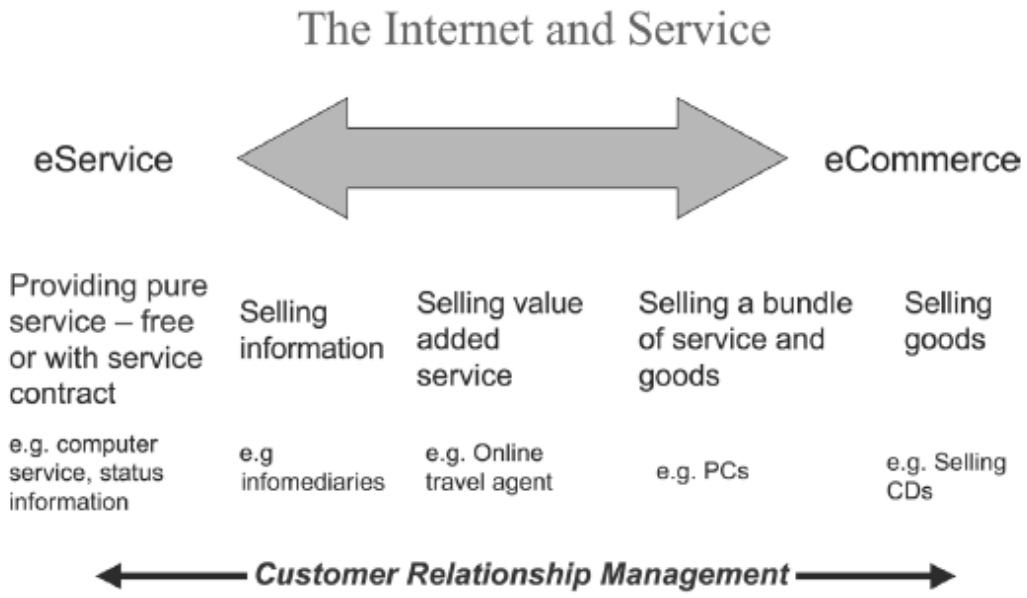



**Figure 2.1: The Internet and Service**

**(Voss 2000)**

Later, a more specific model was proposed by Francis and White (2004) on the internet retailing area. This extended the Voss (2000) model and segmented internet retailing into four categories by product (goods or services) and fulfilment process (offline or electronic) (Figure 2.2).

| Product | Fulfillment Process | |
|---|---|---|
| | **Offline** | **Electronic** |
| **Goods** | **Offline-Goods**<br>• Consumer orders/pays for product then disengages from Web site<br>• Retailer dispatches goods via physical delivery channels<br>• Delayed exchange completed in offline environment<br>*Examples:* Books, clothing, tangible CD's, DVD's, groceries, alcohol | **Electronic-Goods**<br>• Consumer pays for & downloads product via retailer's Web site<br>• Consumer installs &/or prepares product for consumption<br>• Simultaneous exchange reliant on sustained interaction with Web site<br>*Examples:* Software, MP3's, digital periodicals/journals, electronic art |
| **Services** | **Offline-Services**<br>• Consumer books & pays (or quotes credit card) via Web site<br>• Consumer travels to service location (or firm to consumer)<br>• Core service product produced in offline environment<br>*Examples:* Travel, hotels, event tickets, trades services (e.g. plumber) | **Electronic-Services**<br>• Consumer established account or membership & pays online<br>• Consumer produces & consumes service offering via Web site<br>• Simultaneous exchange reliant on sustained interaction with Web site<br>*Examples:* Banking, share trading, adult & chat sites, astrology readings |

**Figure 2.2 Fulfilment-Product Classification Scheme**
**(Francis and White 2004)**

Another commonly adopted categorization of e-service is based on the stakeholders involved in the transaction (Poulymenakou and Tsironis 2003), which suggests that e-services can be categorized into business-to-business (B2B), business-to-consumer (B2C), government-to-business (G2B) and government-to-citizen (G2C).

These typologies have set out the boundaries of different types of e-services and guided many researchers in the area. Many studies on e-service are focused on, or categorised by the features described in these models. This study focuses on the B2C e-services selling goods.

### 2.2.3. Conceptual Frameworks

After identifying the different types of e-service, more detailed research frameworks are proposed. Zeithaml *et al.* (2002) adapted Parasuraman *et al.* (1985)'s service quality model, and applied it to the e-service area. They suggested that in order to fulfil customers' requirements and expectations, there are four gaps to be filled when e-service organisations interact with their customers (Figure 2.3).

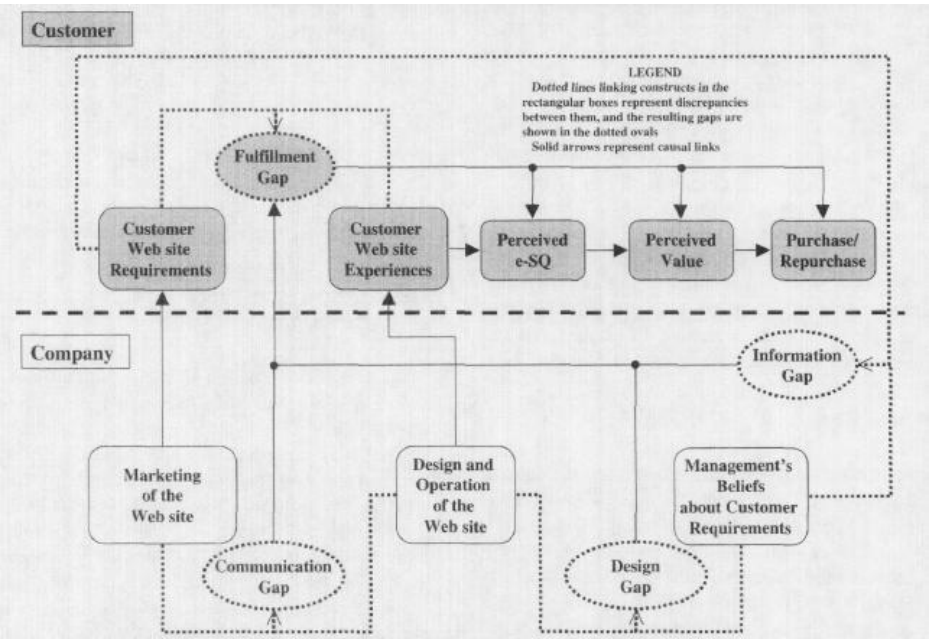
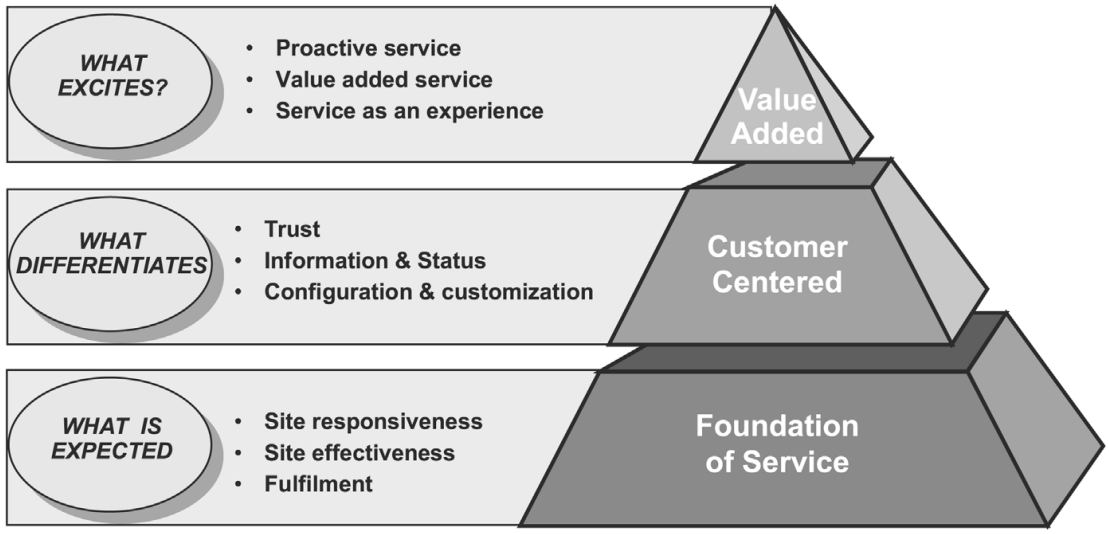



**Figure 2.3: Conceptual Model for Understanding and Improving e-Service Quality (Zeithaml et al., 2002)**

From a more practical perspective, the 'sand cone' model (Voss 2000) provides a framework for operations strategy and service system design in e-service. The author suggested that there are three levels of service, i.e. foundation, customer-centred and value-added services, which build up the pyramid of services on the internet. He differentiated these three levels as the services that are expected from customers, the services that differentiate the organisation from its competitors, and the services that excite the customer.




**Note**: The ability to achieve benefit from the capabilities at each level is dependent on the lower level being in place

**Figure 2.4 'Sand Cone' model of e-Service**

**(Voss 2003)**

Many current studies on e-service are implicitly or explicitly influenced by, and can be fitted into these two conceptual frameworks. This research attempts to fill the "information gap" by exploring how online retail services influence the customers'

experiences, i.e. what excites the customers.

## 2.3. e-Service Design

There appear to be a large number of studies focused on the design of e-services. Two types of designs are covered in the literature. The one that attracts more attention is the design of service processes, mostly from the service providers' perspectives. The other promotes experience-based design, which focuses on the design that aims for customer experience enhancement. This section reviews the relevant literature, under those two topics:

- Experience-Based Design;
- e-Service Process Design.

### 2.3.1. Experience-Based Design

Experience-based design is a design concept that focuses on the customer experience, rather than the system or process (Bate and Robert 2006). It suggests that the goal of design should be to enhance customer experience, and the final user or customer of the service should be involved during the design process (Abels *et al.* 1999). There are two important reasons for service providers to adopt experience-based design: 1) customers have a good sense of the service features, so that they can tell how to best meet customers' requirements (Abels *et al.* 1999), and 2) a good design based on customer experience can improve the performance of

service providers (Pickles *et al.* 2008). However, only a small number of studies on e-service design appear to have undertaken this approach (Taylor *et al.* 2003). Although the current literature on experience-based design in e-service is limited, there appears to be an increasing number of publications on e-service customer experience (see section 2.5 for more details), which may potentially support the concept of experience-based design in the near future.

### 2.3.2. e-Service Process Design

Although there are many researchers who focus on the e-service process design, most of them address issues within a specific discipline, for example retail, library or mobile. The number of studies on the general e-service process design is relatively small. This section aims to answer the question of 'what should be designed', based on existing studies. Four main themes emerged as being the most widely and intensively studied by researchers: information, interaction, audio and visual features, as well as function features.

Some researchers have studied what information should be displayed on websites, and how it should be displayed. It is argued that information quality is considered to be the key determinant of customer satisfaction (Liu *et al.* 2008). It is also argued that comprehensive and lengthy text should be replaced (Choi and Bakken 2010; Dussert 2010) by clear and accurate information (Clayman *et al.* 2008). Some suggest

that the more the service provider presents information about their identity , the more likely the customers will trust them (Chou *et al.* 2009). Kuster and Vila (2011) noted that price and product information must be provided on a retail website.

Regarding interaction, an earlier study showed that human interaction is critical in forming customers' trust in e-service. However, later research has suggested that interactions within a virtual community may enhance customer loyalty (Ellonen and Kuivalainen 2008) and the interactions with technology seem to have displaced the importance of human interactions (Haytko and Simmers 2009). The different results from these two studies may imply a dynamic change in people's views on interactions with their online service providers.

It appears that the audio and visual features of websites have different effects on the shopping atmosphere and customers' experience and performance on the website (Fiore and Kelly 2007; Tuch *et al.* 2009). It is suggested that websites should keep it simple (Choi and Bakken 2010) and display realistic pictures (Choi and Bakken 2010), and carefully use colours and fonts (type and size) (Choi and Bakken 2010; George 2005). It is claimed that easily identifiable icons can increase system usability (Cheng and Patterson 2007), colour appeal is a significant determinant of customer trust (Cyr *et al.* 2010), and colour and graphs attract attention, font, labels and placement increase visibility (George 2005).

Function features usually directly contribute to the core service that a website provides. However, only a few of them appear to be of interest to researchers. Eschenfelder (2003) has identified 'classification categories' as one of the key design elements of retail websites. However, Tateson and Bonsma (2003) criticized the fact that asking shoppers to come up a keyword for search or find the right product category may negatively influence the possibility of browsing and impulse purchase. Ghaphery *et al.* (2001) found that the use of quick links is very common on library websites. Gofman and Moskowitz (2009) developed a method of optimising the landing page of websites to increase consumer acceptability and general customer experience.

## 2.4. e-Service Analyses and Evaluations

The current literature on e-service analysis and evaluation appears to have two main directions. One usually sees e-service as a whole and focuses on how well the whole service performs. For example, many researchers invested in the e-service quality dimensions or determinants (Bauer *et al.* 2006; Parasuraman *et al.* 2005). The other views e-service as a set of different parts, and focuses on what the service provides and their influences on customers: for example, Bauer *et al.* (2005)'s three e-service categories: core service, additional services, and problem-solving services, and .Alkindi and Bouazza (2010)'s evaluation of navigation and search system. This

section reviews the literatures that following these two directions:

- e-Service as a Whole;
- e-Service as a Set of Parts.

### 2.4.1. e-Service as a Whole

Those who see e-service as a whole tend to measure the whole process without differentiating customers' needs in different parts of the service. Many of the proposed measurements of quality dimensions fall into this category. For example, Sahadev and Purani (2008) proposed four components of e-service quality: efficiency, fulfilment, system availability and privacy. This model does not specify which part of the service it is measuring. It seems to suggest that all part of the service should be measured from these four dimensions.

More examples are available, such as Barnes and Vidgen (2003)'s WebQual (usability, information quality, and service interaction), Parasuraman *et al.* (2005)'s E-S-QUAL (reliability, responsiveness, access, flexibility, ease of navigation, efficiency, assurance/trust, security/privacy, price knowledge, site aesthetics, and customization/personalization), Bauer *et al.* (2006)'s eTransQual (functionality/design, enjoyment, process, reliability, and responsiveness), Cai and Jun (2003)'s four dimensions of online service quality (website design/content, trustworthiness, prompt/reliable service, and communication), Herington and

Weaven (2009)'s E-ServQual (personal needs, site organisation, user-friendliness, and efficiency).

### 2.4.2. e-Service as a Set of Parts

In contrast, some researchers seem to suggest that customers may have different preferences for different parts of e-service. This is implied by their studies on one or more parts of the e-service. For example, Collier and Bienstock (2006) suggested that other than website interactivity, outcome and recovery are also important to e-services; Aberg and Shahmehri (2000) studied the web assistant systems that allows customers to call for human assistance; Boyd (2005) indicated that synchronous communication channels may provide a better service than those asynchronous channels; Breitsohl *et al.* (2011) studied the e-business complaint management. These studies indicate that the different parts of e-service may be evaluated according to different criteria by customers. However, these studies also show that there is no systematic categorization of all the parts that a service may consist of.

## 2.5. Customer Experience in e-Service

During a service transaction, customers undergo an experience which centres on the simultaneous delivery and receipt of the service (Dawes and Rowley 1998). It is argued that customer experience is influenced by customers' motivations, goals and

expectations in terms of the activity (Demangeot and Broderick 2006) and has the potential to produce an emotional connection between the customer and the service provider (Gupta and Vajic 1999). Research shows that customer experience has become a key element of the service product and is valued even more than the service's tangible value (Pine and Gilmore 1999). Although customer experience has been identified as an important factor by researchers, emotional characteristics made it difficult to measure, and hence redirected research interests to other aeras, such as quality, satisfaction and loyalty. In the e-service area, a few studies have drawn direct attention to the customer experience.

Some researchers set their research focus on what may influence customer experience in e-service. Dawes and Rowley (1998) were some of the first that addressed the influences of information technology to customer experience. Their case study found that information technology has an impact on the four fundamental characteristics of service experience: inseparability, variability, perishability and intangibility. Demangeot and Broderick (2006) identified four dimensions of experiential intensity: context familiarity, product presence, visual impact and site-user understanding. Wyner (2000) has suggested that price and trust are two of the most critical dimensions of customer experience on the web. Constantinides (2004) identified five categories of web experience components (usability, interactivity, trust, aesthetics and marketing mix). Chen and Chang (2003)

proposed three online shopping components that form online shopping experience (interactivity, transaction, and fulfilment). Other things that may influence customer experience are generally website design features (Chung and Tan 2004), including online catalogue (Tateson and Bonsma 2003), interface (Ding *et al.* 2007) and sound (Fiore and Kelly 2007).

However, little literature was found to have studied what customer experience can bring to service providers. Ha and Perks (2005) suggested that experience may help to achieve brand trust, and Al-maghrabi *et al.* (2011) implicitly indicated that positive customer experience may lead higher intentions to re-use an e-service.

Considering the limited knowledge of customer experience in e-service, which is a core interest of this research, a review of customer experience in the broader general service context is needed, which is presented in the next chapter.

## 2.6. Conclusion

Following the review of e-service literature that is related to this research, a few gaps in the current body of knowledge emerged, and are explained as below. These gaps imply opportunities for future research in the e-service area.

**Nature of e-Service:**

The current conceptual frameworks have provided a detailed guideline for e-service research. However, there seems to be limited empirical research on some of the areas.

- In the Zeithaml et al. (2002)'s model, it appears that many current studies are concerned with the information gap between customers and service providers, and little attention was paid to the design and communication gap, which are both in the operations management area.
- In comparison, the Voss (2003) model provided a more practical guideline as to the value of service; however, the three levels of service are not very well differentiated by researchers.

**e-Service Design**

- It is proposed that e-service should be designed based on customer's experience (e.g. Bate and Robert 2006). However, few researchers have provided an operational approach as to how to use customer experience in e-service design.
- The literature review identified four main themes of e-service process design: information, interaction, audio and visual features, and function features. However, these themes may not cover all areas of e-service, such as comparison and payment.

**e-Service Analyses and Evaluations:**

- Existing studies usually analyse and evaluate e-service as a whole process or as a set of parts. However, these parts of service are divided by what to be evaluated, but ignore the customers' requirements and purposes of using the service.

**Customer Experience in e-Service**

- Much of the existing literature in e-service has attempted to identify the determinants of customer experience. However, there appears to be little on what customer experience can bring to service providers in the e-service context.

This chapter only reviewed the current literature that is relevant this research. It set the context of the research, i.e. e-service, and provided a general idea of what has been studied in the area. Gaps of knowledge emerged during the review. However, the literature on customer experience in e-service is limited. It might be helpful to review the customer experience literature in a more general context in order to provide a better understanding of the topic.

# 3. Customer Experience

## 3.1. Introduction

The notion of customer experience was first addressed in the mid/late 1990s (Carbone and Haeckel 1994; Johnston 1999; Pine and Gilmore 1999), and is receiving more and more attention from researchers (Schmitt 2003; Shaw and Ivens 2002; Voss 2003). This concept has appealed to practitioners as many organisations now refer to this while designing and promoting their services. It is suggested that customers experience should be a company's first concern (Meyer and Schwager 2007) and a considerable number of studies have been conducted. However, customer experience is also rather elusive on account of its intangibility and emotional nature, and through it being a customer-based / perceived construct (Johnston and Kong 2009).

This chapter provides a review of the existing literature on customer experience, which appears to cover four areas:

- What – Perceptions and Definitions, which examines different perceptions of the concept 'customer experience' and reviews the conceptual frameworks proposed by researchers;

- Why – Benefits of Customer Experience, which explains what benefits customer experience can bring to service providers;
- When – Customer Experience Timeline, which explores customer experience in different phases of a service process;
- How – Managing Customer Experience, which focuses on how customer experience is managed in service context; and concludes with;
- Conclusion, which presents the gaps and opportunities emerged from this chapter of literature review on customer experience.

## 3.2. What – Perceptions and Definitions

The term 'customer experience' has been perceived and presented in many different ways by researchers to serve different research interests. Since it is very important to be clear about what the research object is and how people perceive it, this section reviews literature on different perceptions of the concept of customer experience, and relevant conceptual structures.

### 3.2.1. The Concept of Customer Experience

The concept of customer experience has been described in many ways in the literature. Although it seems that each description is unique and different from the others, it also shows some level of consistency. Basically, customer experience is considered to be the aggregated, cumulated (Carbone and Haeckel 1994) and

coalesced (Padgett and Allen 1997) emotional (Dewey 1963; Edvardsson *et al.* 2005; Sandstrom *et al.* 2008) and mental (Edvardsson *et al.* 2005) feeling (Padgett and Allen 1997) that are subjectively (Meyer and Schwager 2007) perceived by the customers (Carbone and Haeckel 1994; Edvardsson *et al.* 2005) during the interaction (Gupta and Vajic 1999), encounter (Carbone and Haeckel 1994), or progress (Carbone and Haeckel 1994; Dewey 1963; Gupta and Vajic 1999) of the product and/or service consumption (Edvardsson *et al.* 2005; Padgett and Allen 1997).

### 3.2.2. Conceptual Frameworks

There appear to be four types of conceptual frameworks that are proposed in order to understand the nature of customer experience and promote further research.

The first type of framework categorises customer experience hierarchically. It is represented by O'Loughlin *et al.* (2004)'s model (Figure 3.1), which suggested three inter-related levels of customer experiences: brand experience, transactional experience, and relationship experience. The brand experience represents the customer's perceived corporate value and brand image. The transactional experience relates to the everyday encounter of the service. The relationship experience represents the experience of having a relationship with the service provider. These three levels of experience are all influenced by positive or negative forces during the

service, and in combination, provide an overall customer experience.

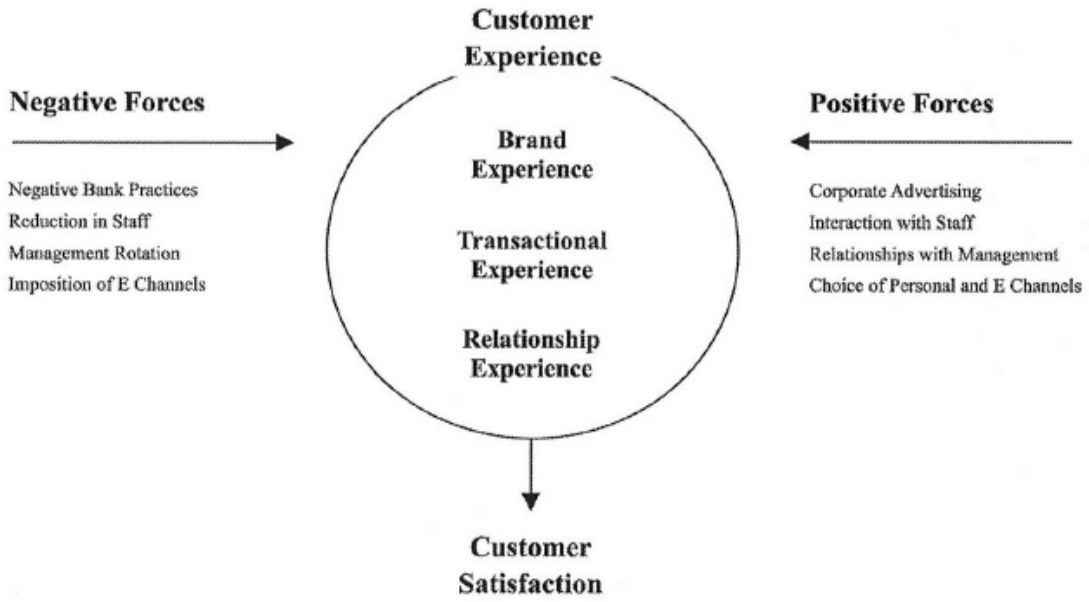



**Figure 3.1 An example of hierarchical categorisation of customer experience (O'Loughlin *et al.* 2004)**

The second type of framework suggests a parallel categorisation of customer experience. For example, Pine and Gilmore (1999) classified customer experience into categories of aesthetic, entertaining, educational and escapist. They seem to suggest different levels of customer involvement. In an aesthetic experience, the customer is only involved in the environment, and has little or no effect on it. In an entertaining experience, customers are passively engaged and attracted. In an educational experience, customers are required to actively participate in the event. In an escapist experience, customers are completely immersed and actively involved in the shaping of experience.

The above two types of framework or categorisation seem to suggest that different types of customer experience should be analysed and evaluated differently, but little advice was given as to guide how it should be done.

The third type of framework emphasises the importance of the context of customer experience. Pullman and Gross (2004) suggested that the service context is one of the primary concerns for experience design and management. It should be a combination of carefully selected service products that facilitate the interaction between customers and the service provider (Gupta and Vajic 1999). Bitner (1992) addressed context as 'servicescape', which suggests that the environmental dimensions of service is a key point for service experience.

The structure of the last type of research frameworks appears to be less well formed than the above three. It focuses on the transactional experience, according to O'Loughlin *et al.* (2004), and sees customer experience as a collection of 'clues'.

The 'experience clue' concept was introduced by Carbone and Haeckel (1994), and was defined as "the visual, auditory, tactile, aromatic, and taste signals emitted by products, services, and the environment that, in aggregate, form a customer perception" (p.18). They also claimed that an experience clue can either be performance-based or context-based. In addition, Berry and Carbone (2007) further

extended the work and categorised experience clues into three main groups: functional clues, mechanic clues, and humanic clues.

## 3.3. Why – Benefits of Customer Experience

Meyer and Schwager (2007) suggested that customer experience should be a company's first concern. Berry and Carbone (2007) also argued that great organizations systematically manage customer experience aiming to establish strong emotional connections with their customers. Many have claimed that positive customer experience consistently creates values that are appreciated by customers (Berry and Carbone 2007; Berry *et al.* 2002; Chen and Chen 2010; Hoch 2002; Voss 2004). However, it seems that there is no systematic analysis of what benefits customer experience can bring to the service providers. Following an initial literature review in the relevant area, it appears that four benefits have attracted the most research interest, while others exist:

- Customer Satisfaction;
- Customer Expectations;
- Customer Loyalty;
- Behavioural Intentions.

### 3.3.1. Customer Satisfaction

Grace and O'Cass (2004)'s research shows that service experience has a positive

effect on satisfaction. Chen and Chen (2010) also found a direct effect of the quality of experience on satisfaction. According to Oliver (1997), satisfaction is defined as the level of consumer's fulfilment response to a product or service feature. It is the judgement of a customer after the evaluation or assessment of a service experience. It directly affects customers' likelihood of repurchase (Flanagan *et al.* 2005).

### 3.3.2. Customer Expectations

Meyer and Schwager (2007) argued that people's expectations are set in part by their previous experiences with a company's offerings. Holloway and Beatty (2003) suggested that service quality expectations vary greatly, especially depending on the experience level of the customer and perceived reputation of the organisation. It appears that customer experience is a key issue in forming customer expectations.

### 3.3.3. Customer Loyalty

One of the most important ingredients in building customer loyalty is managing each customer's experience (Crosby and Johnson 2007). Customer loyalty is often associated with a brand, which could be a term, sign, symbol, design or a combination of these. In the marketing literature, brand building is a major undertaking to attract customer loyalty. Successful brands create wealth by attracting and retaining customers, as certain loyal customers may be willing to pay more for a brand (Mascarenhas *et al.* 2006). Any organisation with loyal customers

has considerable competitive advantage (Jones and Farquhar 2003). According to Dick and Basu (1994), loyalty is an interaction between two components: a) the relative attitude that a customer has towards a company or brand, and b) the intention to repurchase that brand or from that company. Jones and Farquhar (2003) argued that the loyalty of a consumer is determined by the strength of the relationship between attitude and behaviour. In order to build customer loyalty, managing each customer's experience is perhaps the most important ingredient (Crosby and Johnson 2007). Pullman and Gross (2004)'s research shows that the type of customer emotions evoked in a hospitality setting significantly influences loyalty behaviours. In addition, Mascarenhas *et al.* (2006) research indicates that lasting customer loyalty is approachable by implementing total customer experience management.

### 3.3.4. Behavioural Intentions

Customer experience is found to be able to bring other benefits to service providers. According to Ha and Perks (2005), customers rely on their prior experience when forming intentions and making repurchase decisions. Voss (2003) suggested that an enjoyable experience will lead to customers returning to the service site. Bonera (2011) found that online purchase intention is influenced by customer's experience with the website. Chen and Chen (2010) identified an indirect effect of customer experience on behavioural intentions, which is mediated by perceived value and

satisfaction.

## 3.4. When – Customer Experience Timeline

According to Crosby and Johnson (2007), every interaction is an opportunity for communication. In service encounters, customers gain experience when they are interacting with service providers. Meyer and Schwager (2007) suggested that whether or not it is a business or a consumer being studied, data about its experiences are collected at 'touch points', which usually do not have equivalent value. Research has focused on those 'touch points' that appear in different phases of service processes. An assessment of their contribution to the overall customer experience has been carried out. Voss and Zomerdijk (2007) claimed that a customer journey starts long before the actual transaction starts, and ends long after the transaction is completed. They argued that as opposed to a single transaction or purchase experience that involves a service product and a service process, the service is seen as a journey that spans a longer period of time, and consists of multiple components and multiple touch points. Therefore, a touch point can belong to the following phases of a service experience: 1) pre-service experience; 2) transactional experience, which includes the start experience and the end experience; and 3) post-service experience. In some studies, the 'peak experiences', including both high peaks and low peaks, have been located in a different research context.

In this section, current studies are reviewed in the following structure:

- Pre-Service Experience;
- Service Experience – Start and End;
- Service Experience – Peaks and Trend;
- Post-Service Experience.

### 3.4.1. Pre-Service Experience

The 'pre-experience' concept was proposed by Flanagan *et al.* (2005) in a study of customer confidence in the public sector. They suggest that customers' 'pre-experience' contributes to customers' confidence towards the service and it does not require direct contact with service provider. In the private sector, researchers (Grace and O'Cass 2004; Johnson and Mathews 1997) argued that unlike the pre-purchase evaluation of goods, the pre-purchase evaluation of service is more difficult, because services are high in experience qualities, which can only be discerned after purchase or during consumption, and credence qualities, which may be impossible to evaluate by customers even after purchase or consumption (Comm and LaBay 1996). According to Edvardsson *et al.* (2005), the role of the pre-purchase service experience is to help customers assess the quality and value of the service in context, thus facilitating assessment and decision making by the customer.

Edvardsson *et al.* (2005) proposed seven benefits or principles of providing customers with a pre-purchase service experience:

1) Add unique and personalized value to the service;
2) Connect with the customer by means of exposure to the organization's norms and values;
3) Learn more about customers' needs and desires to be used during service development and in quality improvement efforts;
4) Increase loyalty;
5) Create a unique identity;
6) Manage customer expectations and quality-in-use; and
7) Improve sales. ( p.157-158)

### 3.4.2. Service Experience – Start and End

**Start**

There has been an emphasis in the service literature on strong starts and consistent performance within the encounter, asserting that both the initial and final service should be performed equally well (Hansen and Danaher 1999). However, since consistent performance is often difficult to achieve, Hansen and Danaher (1999) carried out a research to investigate "whether certain patterns of inconsistent performance involving both the initial and final events of the encounter can produce desirable effects on service value" (p.227). They found that an improving

performance during the service encounter receives more favourable judgements than a decreasing performance. The result shows that a good start does not have as much impact as a good end in generating customer satisfaction and purchase intentions in services. The researchers suggest that the start experience has more influence on building expectations of the final service result.

**End**

In addition to Hansen and Danaher (1999) research, which shows the importance of the end experience, Carmon and Kahneman (1996) also found the global retrospective evaluations of queuing experiences to be dominated by the final affective state. They suggested that the 'end rule' applies to goal-directed experiences. Hansen *et al.* (2004) research in restaurant service experience indicates that payment, as the main component within the last stage of the meal experience, represents an important part of the service; when customers experience the payment process in an unsatisfactory way, it can have a negative effect on their experiences as a whole. However, Verhoef *et al.* (2004) research shows a negative effect on the end utility of the service call on customer satisfaction. Although they have proposed several possible reasons, none of them has been tested yet.

### 3.4.3. Service Experience – Peaks and Trend

**Peak**

Ariely and Carmon (2000) argued that when people summarize experiences, they appear to extract only a few defining features (gestalt characteristics) of these sequences, and combine them into an overall summary evaluations of the sequences, rather than simply combine the intensity of their actual experiences. These defining features include “particular salient characteristics such the most intense state (peak) and the final state (end) of the experience” (p192). Verhoef *et al.* (2004) argued that although it was assumed that firms should deliver a consistent performance during a service encounter in the early service literature, research in psychology states that in addition to the average performance, the peaks in the performance are important. The authors considered the service process to be a sequence of events, studied the service calls of a large European financial service provider, and found that although the average utility of the service call was a significant predictor of the experienced utility (customer satisfaction), the positive peak of the sequence had a positive effect on the experienced utility.

**Trend**

It is argued that customers remember the trend in the sequence of pain and pleasure, instead of every single moment of an experience (Chase and Dasu 2001). A representative study on the trend of transactional experience was carried out by (Hansen and Danaher 1999). Their findings indicate that customers favour a positive performance trend of service, rather than a negative one. It is also showed that

customers who experience inconsistent starts and ends are more extreme in their judgements than those who experience consistent performances. Furthermore, positive trends seemed to result in stronger purchase intentions, compared to the neutral and negative trends

### 3.4.4. Post-Service Experience

Zeithaml and Bitner (1996) argued that post-service experience evaluation can also be difficult for service customers, particularly for credence services, such as medical and legal services. Mano and Oliver (1993) investigated the underlying dimensionality of three aspects of the post-consumption experience – product evaluation, product-elicited effect, and product satisfaction, and integrated these concepts through a suggested causal framework. They argued that adopting a two-dimensional view of post-consumption emotional experience suggests that 1) pleasantness is of a different composition to low-arousal positive affect; and 2) hedonic evaluation is mostly affective while utilitarian evaluation is mostly cognitive. Their results show that "satisfaction response is not easily tied down, because it does not respond as a pure affect nor does it exist in the absence of feeling" (Mano and Oliver 1993).

## 3.5. How – Managing Customer Experience

After the discussion on the nature, reason and timescale of customer experience,

this section discusses how organizations manage customer experience through operations. Research in this area can be categorized into three main groups:

- Factors and Determinants of Customer Experience;
- Design of Customer Experience;
- Tools for Evaluation and Assessment.

### 3.5.1. Factors and Determinants of Customer Experience

Researchers have identified various factors that may possibly influence customer experience, which includes the service context, employees, other customers, waiting time, and the frequency of customer visits.

Firstly, the service context has been identified as one of the most import factors by a number of researchers. Gupta and Vajic (1999) defined context as the physical setting where customers experience the service. Michon *et al.* (2007) research shows that the mall environment has a direct influence on fashion leaders' hedonic shopping experience. Demangeot and Broderick (2006) found that when consumers are shopping online, they think like shoppers rather than computer users, and they prefer a familiar shopping context. Hoffman *et al.* (1995) identified the facility problems which are particular difficult to recover from in services. Music, as a part of the service context was suggested to have great influence of service consumption experience (Jain and Bagdare 2011). Although the importance of service context has

been recognized by researchers, it seems that not many researchers are studying its impact intensively. The research remains on the identifying level, with few practical suggestions regarding how to manage the service context.

The second factor being discussed is the impact of employee behaviours on customer experience. The employees have been identified as a very useful tool to improve service functions (Haeckel *et al.* 2003) Research on employee's influence on customer experience has attracted research interest. Hoffman *et al.* (1995) found it was difficult to recover any service failure that caused by employee's behaviour. (Voss and Zomerdijk 2007) suggested the satisfied and motivated employee is a key to excellent service. Organisations can reinforce the brand experience within a particular touch point by controlling employee behaviours (Crosby and Johnson 2007). Specht *et al.* (2007) also found the customers judge service encounters on the basis of service employees' effort and abilities.

Researchers have suggested some methods to manage the employees in order to deliver the enhanced customer experience. Jerome and Kleiner (1995) have identified several success factors that organizations believe contribute to the service level provided by employees to customers: 1) recruiting and selection of employees; 2) orientation programmes; 3) customer service strategies; 4) special employee programmes; and 5) morale and motivation. Bettencourt and Gwinner (1996)

suggested that employee customization is a competitive advantage of organizations, and can be thought of along two behavioural dimensions: interpersonal adaptive behaviour, which refers to an employee altering various interpersonal communication elements to meet what they perceive to be the unique needs of individual consumers, and service offering adaptation. This refers to tailoring or creating a unique bundle of service attributes or benefits, based on an individual consumer's needs. Sarel and Marmorstein (1998)'s findings suggest that perceived employee effort during the delay can be enhanced by 1) employee training; 2) delivery process improvement; and 3) customer education and information. Besides this, an effective apology is also very important. All these methods focus on improving employee skills, but, the kind of skills employees need to provide an excellent service experience is still to be questioned. Further research into specific industries is desired.

Furthermore, experiences are not only influenced by interaction with the service providers, but also by the other customers (Voss and Zomerdijk 2007). According to Grove and Fisk (1997), a service encounter is often characterized by the condition of multiple customers whose presence may influence each other. In Lehtinen and Lehtinen (1991)'s study, they found that various attributes of "others" contribute to the overall quality of the service. Evidence from many studies shows that other customers sharing a service environment can affect customer experience (Grove and

Fisk 1997). This implies guiding customers' behaviour during the service encounter could be considered as a way of influencing customer experience by organizations. However, little literature is available regarding this issue.

Dawes and Rowley (1998) presented two case studies to illustrate that waiting experience can be managed to create a positive experience. They argued that the nature of the waiting experience is that customers have to accept the fact of the service they are seeking is not currently available. A generally acceptable strategy would seem to be to seek to embed the waiting experience into the total service experience, so that customers do not perceive any discontinuity, or indeed start to welcome the waiting experience in its own right, although this must be managed in different ways in different environments (Dawes and Rowley 1998).

In addition, Morgan and Rao (2003) suggested that the frequency of customer visits is another factor that may influence customer experience. They argued that a positive experience may revert to a neutral one if changes are not made frequently enough. On the other hand, they did not mention whether the experience would revert to a negative experience.

Michon *et al.* (2007)'s research shows that customers' shopping experience is directly influenced by the mall environment. According to Menon and Bansal (2007),

the perceived social power of customers also affects their perception of experience. Mascarenhas *et al.* (2006) suggested that customer experience is captured in three interactive elements: physical moments, emotional involvement, and its value chain moments.

### 3.5.2. Design of Customer Experience

"While operations management research has focused on service design, the area of experience design has received less attention" (Pullman and Gross 2004, p.552). However, due to the importance of customer experience, an increasing number of researchers showed their interest in experience-based design recently. McLellan (2000) suggested that the goal of experience design is to make experience functional, purposeful, engaging, compelling, and memorable. Johnston (1999) suggested that the design of a service need to be consistent with its service concept. According to Cole-Colander (2003), designing customer experience aims at transferring design thinking from the retail sector and leading to an agenda for change.

In order to design a better service experience, Stuart and Tax (2004) argued that customer experience can be enhanced by designing the service system to encourage greater active customer participation. Pickles *et al.* (2008) used experience based design as a methodology, and demonstrated how three theoretical components of good design: functionality, engineering and aesthetics can be used as a framework to

improve performance, safety and governance. According to Carbone and Haeckel (1994), experience design can be divided into four phases; 1) acquisition of service experience design skills; 2) data collection and analysis; 3) service clue design; and 4) implementation and verification. Fang and Salvendy (2003) suggested the nineteen most important design rules for customer-centred website design, and three important issues that customers are aware of: 1) attributes; 2) trust; and 3) graphics. In addition, Johnston and Kong (2009) identified a ten-stage road map for improving customer experience in a study of four different types of service organisations

In addition to the design process, Edvardsson *et al.* (2005) introduced a concept of 'experience room', which allows service providers to simulates the service experience so that customers may 'test-drive' the service. They suggested that service providers should take consideration of the following six dimensions when designing the 'experience room': 1) physical artefacts, 2) intangible artefacts, 3) technology, 4) customer placement, 5) customer involvement, and 6) interaction with employees.

Most of the current literature focuses on providing a basic structure of experience-based design, few paid attention to the detailed design of an element, or say, a service clue. Further research is needed to investigate how to design different types of service elements.

### 3.5.3. Tools for Evaluation and Assessment

In order to allow researchers and managers to systematically assess customer experience, a number of tools have been developed.

The 'walk-through audit' (Fitzsimmons and Fitzsimmons 1994; Rowley 1994) is a powerful tool to assess how customers make the final assessment about a service. It has been applied in restaurant, library and museum contexts. Rowley (1994) suggested implementing the walk-through audit in several stages: 1) build typical customer profile; 2) design frames; 3) execute frames, analyse data from frames; 4) introduce recommended changes to strategic plan; and 5) modify frames. Fitzsimmons and Fitzsimmons (1994) suggested that questions should be asked with five-point scales. The disadvantage of this tool is that the pre-set questions may lack flexibility when being assessed from the customer's perspective.

Johnston (1999) proposed a Service Transaction Analysis (STA) technique that allows managers to analyse their service processes at a detailed level from the customer's perspective. He structured the process according to four key elements: 1) the service concept; 2) the service process; 3) transaction quality assessment; and 4) messages. While implementing this technique, a service process can be divided into single activities. Customers assess each single activity, and the result will be cumulated into

the level of satisfaction or dissatisfaction with the service (Johnston 1999).

Recently, Kim *et al.* (2011) developed a 26-item scale (Consumer Experience Index) that measures seven dimensions of consumer experience: environment, benefits, convenience, accessibility, utility, incentive and trust. Their research shows that the scales are reliable and valid.

## 3.6. Conclusion

Following the review of e-service literature that is related to this research, a few gaps in the current body of knowledge emerged, and are explained as below. These gaps imply opportunities for future research in the e-service area.

**Nature of e-Service:**

The current conceptual frameworks have provided a detailed guideline for e-service research. However, there seems to be limited empirical research on some of the areas.

- In the Zeithaml *et al.* (2002)'s model, it appears that many current studies are concerned with the information gap between customers and service providers, and little attention was paid to the design and communication gap, which are both in the operations management area.
- In Comparison, the Voss (2003) model provided a more practical guideline as

to the value of service; however, the three levels of service are not very well differentiated by researchers.

**e-Service Design**

- It is proposed that e-service should be designed based on customer's experience (e.g. Bate and Robert 2006). However, few researchers have provided an operational approach as to how to use customer experience in e-service design.
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- Existing studied usually analyse and evaluate e-service as a whole process or as a set of parts. However, these parts of service are divided by what to be evaluated, but ignore the customers' requirements and purposes of using the service.

**Customer Experience in e-Service**

- Much of the existing literature in e-service has attempted to identify the

determinants of customer experience. However, there appears to be little on what customer experience can bring to service providers in the e-service context.

This chapter only reviewed the current literature that is relevant this research. It set the context of the research, i.e. e-service, and provided a general idea of what has been studied in the area. Gaps of knowledge emerged during the review. However, the literature on customer experience in e-service is limited. It might be helpful to review the customer experience literature in a more general context in order to provide a better understanding of the topic.

# 4. Research Questions

## 4.1. Introduction

The literature review revealed several interesting gaps in the current body of knowledge on e-service and the customer experience. However, given the limitation of time and accessibility of resources, this research can only focus on a small number of them.

The purpose of this chapter is to present the development of the research questions that this research trying to answer. It first explains the gaps that this research will focus on. Then, as there is limited research on relevant topics, a preliminary study was designed and conducted, which aimed to gain some insights into the background and to re-confirm the practical value of this research. Following a discussion on the results of the preliminary study, the research questions are finally proposed.

Therefore, this chapter covers the following sections:

- Gaps to Fill;
- Preliminary Study;
- Research Questions.

## 4.2. Gaps to Fill

Among all the gaps identified in the literature review (see section 2.6 and 3.6), some of them appear to be of interest to this research:

- Customer experience based e-service design: it has been proposed that an e-service should be designed based on customer's experiences (Pickles *et al.* 2008). However, few researchers have suggested an operational approach as to how to use customer experiences in e-service design.
- e-Service Analyses and Evaluations: Existing studies usually analyse and evaluate e-service as a whole process or as a set of parts. However, these parts of the service are divided by what to be evaluated, and ignore the customers' requirements and purposes for using the service.
- Customer Experience – What: The concept of an 'experience clue' is specifically proposed for the experience design process. It breaks the experience into elements so that we can study it in more detail. However, further research is needed to determine what the clues are and how they influence customer experience.
- Customer Experience – Why: Although the relationship between customer experience and repurchase intention was indirectly implied by a few studies (Chen and Chen 2010; Ha and Perks 2005), research focusing on this relationship appears to be sparse

However, as the existing literature has provided limited knowledge of these gaps and the issues proposed in the conceptual framework of this research, a preliminary study was conducted in order to generate an initial understanding of the research context, so as to propose the research questions. The details of the preliminary study will be explained in the next section.

## 4.3. Preliminary Study

This section reports the preliminary study from four aspects; purpose, methods, samples and results.

### 4.3.1. Purpose

The purpose of this preliminary study is to develop a basic understanding of the research context and confirm a few issues in the conceptual framework by exploring both customers' and service providers' perceptions of:

- the e-service activities and the interactions behind them; and
- positive and negative customer experiences and their influences on repurchase intention.

A few questions are proposed for this preliminary study to answer:

1) a. Are there 'online customer activities'?

b. How are the ‘online customer activities’ perceived by customers and online retail service providers?

2) a. Are there different ‘interactions’ between customers and online retail service providers?

b. How are the ‘interactions’ perceived by customers and online retail service providers?

3) a. Do ‘online customer activities’ and interactions’ influence customer experience and repurchase intention?

b. How are the influences perceived by customers and online retail service providers?

### 4.3.2. Methods

In order to get people’s perceptions, it is essential to ask people questions. Wilson and Sapsford (2006) suggested two basic methods of data collection for researchers to explicitly question people, namely interviews and questionnaires. They suggested that in the interviews and questionnaires with fixed structures, questions usually have the same wording and are asked in the same order. The researcher has limited control or opportunity to ask more questions based on responses. In less-structured interviews or semi-structured interviews, questions may not be asked in an invariable order, and the wording of questions can be varied. More importantly, less-structured methods usually allow researchers to ask supplementary questions

according to the replies received.

As this study aims to explore people's perceptions of a few terms, supplementary questions may be needed to explain and probe into certain issues. Therefore, a semi-structured interview was selected as the basic data collection method for the preliminary study.

To answer the research questions, responses from two parties are needed, customers and online retail service providers. In order to complete the task in a more timely and effective manner, the use of a focus group was discussed. A focus group is defined by Krueger (1988) as "a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, nonthreatening environment" (p.18). It is a technique that is widely accepted for its believable results and reasonable cost (Krueger 1988). Thus, it was decided to use a focus group to collect data from customers. Regarding the perceptions from the service provider's perspective, as it might be difficult to gather website designers from different organisations together, individual interviews were carried out.

### 4.3.3. Samples

The preliminary study follows a convenience sampling strategy. Bryman (2008) defines a convenience sample as a sample "that is simply available to the researcher

by virtue of its accessibility" (p.183). Although it is criticized for not being able to generalize the findings to a broader population, it is also argued to be a highly desirable sampling strategy to carry out some preliminary analysis (Bryman 2008) because of its cost effective nature.

The criterion for selecting customer participants for interview was that they must have the experience of online purchasing. Five university students were recruited from a friend's house. The focus group took place in a very relaxing, friendly and informal environment, which may potentially help them to give more details about their experiences. The whole conversation was recorded with a digital recorder and transcribed soon after the session for analysis.

The criterion for selecting interviewees from service providers was that the person must be involved in the design process of a retail website. Many UK retail websites were approached, but only two of them replied and agreed to be interviewed. One interview was with the director of an online bookshop. The other was with an external consultant at a large electronics retail website. Both interviews were carried out at places provided by the interviewees for their convenience. Both interviews were recorded with a digital recorded and transcribed soon after the interviews finished.

### 4.3.4. Findings

The results of the preliminary study are summarised in Table 4.1.

| Questions | | From Customers' Perspective | From Online Retail Service Providers' Perspective |
|---|---|---|---|
| 1) | **a. Are there 'online customer activities'?** | Yes. | Yes. |
| | **b. How are the 'online customer activities' perceived by customers and online retail service providers?** | The word 'activity' did not appeal to the participants very much. However, they see online transactions as several key stages that fulfil their purposes, and mentioned asking questions and finding answers as a part of service that exists during the whole transaction. | They see online transactions as customer journeys with several key stages, and design websites stage by stage according to their purposes to fulfil. |
| 2) | **a. Are there different 'interactions' between customers and online retail service providers?** | Yes. | Yes. |
| | **b. How are the 'interactions' perceived by customers and online retail service providers?** | It appears that 'interaction' was perceived as different ways to exchange information. However, when talking about 'interactions', they usually refer to a specific feature. | 'Interaction' is perceived differently by the two organisations. One sees it as customer's communication with the website; the other sees it as customer's communication with their service employees through the website. |
| 3) | **a. Do 'online customer activities' and the 'interactions' influence customer experience and repurchase intention?** | Yes. | Yes. |
| | **b. How are the influences perceived by customers and online retail service providers?** | The 'activities' and 'interactions' seems to have more influences on the customer experiences, while the influences on repurchase intention varies depends on the purpose of the interaction. | Although both interviewees confirmed that the influences exist, it appears that neither of them was clear about whether different 'activities' or 'interactions' have different influences on customer experience and repurchase intention. |

**Table 4.1 Findings of Preliminary Study**

It seems that neither the customers nor the service providers were very clear about what ‘activity’ and ‘interaction’ mean. However, they confirmed similar definitions of these two terms.

It appears that using ‘stage’ is a good substitute for ‘activity’ when investigating customers’ perceptions. However, this word in particular implies the ‘activities’ in a continuous series, but not allowing other activities to sit alongside them. For example, the participants at the focus group mentioned that they may want to ask questions at any of the stage, or they may skip one or two stages when using retail websites. It may be necessary to ask for key stages first to show examples of activities, and then to ask if there are any other activities in the transactions.

The term ‘interaction’ is perceived differently by customers and service providers. When questioned about interaction, the customers usually refer to a feature offered on the website. It suggests that ‘interactions’ may be investigated indirectly. through the features offered on retail websites.

The preliminary study also suggests that the customers believe that positive customer experience may lead to positive repurchase intention. However, the online retail service providers were not very sure about this.

## 4.4. Research Questions

Taking into consideration the findings of the preliminary research, the following research question was proposed:

**Main Research Question**

What are the types of retail website feature in terms of the way they influence customer experience and repurchase intention?

In order to answer this research question, three sub questions were proposed to facilitate the data collection:

**Sub Research Question 1**

What features are offered on retail websites?

**Sub Research Question 2**

What activities do customers perform on retail websites?

**Sub Research Question 3**

What is the relationship between customer experiences and repurchase intention?

(see section 1.3 on page 3 for the descriptions of terms used in the research question.)

## 4.5. Drawing the Boundaries

To clarify the focus of this research, boundaries need to be drawn between what will be studied and what is excluded from this research (summarised in Table 4.2).

| Studied | Excluded |
|---|---|
| Experience-Based Design | e-Service Process Design |
| Service Experience | Product Experience |
| Online Experience | Offline Fulfilment |
| Service Experience (during transaction) | Pre-Service Experience, Post-Service Experience |
| General Website Feature | Particular/Single Website Feature |
| Pattern | Functionality, Appearance |
| Influences | Evaluation |

**Table 4.2 Drawing the Boundaries**

As reviewed in Chapter 2, there are two types of designs in the e-service area, experience-based e-service design (e.g. Bate and Robert 2006) and e-service process design (e.g. Cheng and Patterson 2007). The research on experience-based e-service design usually works from the customers' perspectives and aims to provide

enhanced customer experience. The e-service process design literature is mostly from service providers' perspective aims to improve the efficiency of the service system. This research follows the experience-based e-service design stream, studies the customer experience and explores how it may contribute to e-service design.

The customer experience is generated during a customer's interaction with either a product and/or a service. Although the context selected is online retail service, which may involve physical products and the offline fulfilment process, this research focuses on the online service part, which includes only the website and the features provided on the website. The physical products and the offline fulfilment process are considered to be the face-to-face traditional service facet of online retail services and are not studied in this research.

It is suggested that customer experience of services are generated in three periods, pre-service (e.g. Edvardsson *et al.* 2005), service (e.g. Hansen *et al.* 2004), and post-service (e.g. Zeithaml and Bitner 1996). The interest of this research lies on customer experience generated during the transaction, i.e. service experience. The service experience is considered to be important as it is the start point of customer's interaction with a service provider and the main source of customer experience.

Furthermore, this research studies general website features and aims to identify a pattern as to how they influence customer experience, rather than focus on any

particular website feature and its functionality or appearance. It focuses on these features' influences on customer experience to provide insights for service design, rather than attempting to evaluate the online retail service provided.

# 5. Research Paradigms

## 5.1. Introduction

The previous chapter finalized the research questions that this research will answer. However, before any data is collected to answer the research questions, it is essential to discuss the issues in the research paradigms and provide a philosophical rationale that underpins this research. This chapter addresses those issues under the following topics:

- Research Strategy;
- Ontological Considerations;
- Epistemological Considerations.

## 5.2. Research Strategy

Having finalized the research questions, choosing a research strategy is the next most important decision to make (Blaikie 2007). It is the logic for generating new knowledge, which provides different ways to answer the research questions (Blaikie 2007) and represents the relationships between theory and social research (Bryman 2008). Four main research strategies will be discussed in this section: Inductive, Deductive, Retroductive and Abductive (Blaikie 2000; Blaikie 2007), one of which will be selected to be the guiding strategy for this research.

The Inductive Strategy starts by observing unselected facts in the real world. These facts are later described and analysed by the researcher without using hypotheses. Finally, generalized theories are concluded from the patterns of the observed relationships of the facts. Evidence is sought to confirm the theory.

The Deductive Strategy appears to adopt a different route than the Inductive Strategy. It attempts to develop a possible answer to the research question or problem at the beginning, by reviewing existing theories. These answers are proposed in the form of hypotheses, which will then be tested by observations. It aims to falsify the hypotheses using the observed evidence rather than confirm them.

In addition to the Inductive and Deductive Strategies, which are both based on a linear logic for generating knowledge, the Retroductive Strategy based cyclic process and Abductive Strategy based on spiral processes are also adopted by social science researchers (Blaikie 2000).

The front end of the Retroductive Strategy is similar to the Deductive Strategy. It starts by proposing a hypothetical model that appears to the researcher to explain the mechanisms that produce social phenomena, and tests it with observations.

However, the difference is that in the Retroductive Strategy, the tests aim to confirm that the model works and can explain the mechanisms rather than falsify the model. The process of model building is then repeated to explain the mechanisms.

Unlike the above three research strategies which focus on the external realities and aim to identify a pattern or falsify or confirm a hypothesis, the Abductive Strategy aims to understand social life from the social actors' perspective (Blaikie 2007). The first stage involves discovering how social actors describe and understand the research problem of the interest to the researcher. The second stage aims to abstract the concepts from the social actor's statements and conclude an understanding. Then, this understanding can be either further refined using an Abductive strategy or be transformed for use in other research strategies.

In the area of this research, it is very important to understand how the customers (social actors) perceive their online shopping transactions (social life), in terms of the websites' influences on customer experience and repurchase intention. Only by understanding these issues from the customers' own words is it possible to develop a theory on customers' preferences on the interactions with retail websites, hence to propose a guidance for customer-experience based online retail service design. Thus, this research adopts the Abductive Strategy to lead the way towards answering the research questions.

## 5.3. Ontological Considerations

Ontology is concerned with the nature of social entities (Bryman 2008), and discusses how reality exists. The major debate is whether reality exists externally to social actors, or whether reality is constructed from the social actors' perceptions and actions. Most social science researchers address these two opposed suggestions as the two ends of a continuum. For example, realism vs. nominalism (Burrell and Morgan 1979; Porta and Keating 2008), objectivism vs. constructionism or constructivism (Bryman 2008), and realism vs. idealism (Blaikie 2007).

The realists and objectivists suggest that the social phenomena exist independently to the observer or their mind, are beyond our reach and influence, and are out there to be discovered (Bryman 2008; Burrell and Morgan 1979; Porta and Keating 2008); however, the nominalists, idealists and constructionists' view suggest that social phenomena have no independent existence, and are products of people's minds (Blaikie 2007), can be interpreted in many different ways by individuals (Burrell and Morgan 1979), and are continually being accomplished by social actors (Bryman 2008)

This research takes the constructionism position to explore people's perceptions on how their customer experiences are influenced by online retail service providers and

their websites. It is believed that perceptions are continuously changing and constructed from people's minds and behaviours.

## 5.4. Epistemological Considerations

Having discussed how reality exists, it is now the time to think about how reality can be studied. Epistemology deals with the generation of knowledge. Similar to the ontological considerations, it is also usually viewed as a continuum with two ends. One suggests that reality can and should be studied in the same way as natural science, while the other claims that the subject matter of social science is fundamentally different from that of natural sciences, and hence, should adopt different research procedures. Some of the most commonly discussed theories usually involves positivism as one end of the continuum, and describe and define the other end differently as anti-positivism (Burrell and Morgan 1979), phenomenology (Gill and Johnson 1991) or interpretivism (Bryman 2008).

Positivists suggest that natural science research methods should be applied to study social reality as well. However, this is usually criticized, as positivist researchers usually look for the causes of social phenomena with little regard for the subjective states of individual (Miles and Huberman 1994), and ignores people's perceptions, context and socio-historical complexities of human behaviour, which are all very important in the social world. In contrast, the interpretivists argue that due to the

qualitative differences in the subject matter in natural and social sciences, different approaches are required (Blaikie 2007).

This research aims to collect people's perceptions, in order to understand the social structure and interactions, which suggests that a positivist position may not be suitable for this research. Therefore, this research stands at a position that is near the interpretivist end.

## 5.5. Summary

This chapter has discussed the research paradigms for social research from three aspects: research strategy, ontological considerations and epistemological considerations. It has aimed to develop and justify the philosophical positions that underpin this research.

It is concluded that this research aims to understand a social phenomenon (the influence of online retailers and their websites on customer experience and repurchase intention) from the social actors' (customer) perspective. It believes that reality is constructed from people's minds and actions, and is continuously changing. This suggests that social science research should adopt a different approach from natural science.

# 6. Research Method

## 6.1. Introduction

The previous chapter reviewed the philosophical considerations of this research. In this chapter, the design of the main study is discussed in detail, with the aim of providing a justification for the selected research methods. The following aspects will be visited and discussed:

- Survey as Research Method;
- Types of Survey;
- Three Studies.

## 6.2. Survey as Research Method

Yin (2009) suggested that there are five major research methods in social science research: experiments, surveys, archival analyses, history and case studies.

Experiments: The basic intent of an experiment is to test the impact of a treatment (or an intervention) on an outcome, controlling for all other factors that might influence that outcome (Creswell 2003). It engenders considerable confidence in the robustness and trustworthiness of causal findings (Bryman 2008).

Surveys: Survey design entails the collection of data on many cases at a single point in time, in order to collect data in connection with variables (Bryman 2008). It usually involves quantitative or quantifiable data, and aims to describe the trends, attitudes or opinions of a population by studying a sample from the population.

Archival Analyses: In archival analysis, a researcher examines existing document material for both qualitative and quantitative data (Bryman 1989).

History: A history research is similar to archival analysis. However, it relies primarily on qualitative data rather than quantitative data (Yin 2009)

Case Studies: A case study is a history of a past or current phenomenon, drawn from multiple sources of evidence. It can include data from direct observation and systematic interviewing, as well as from public and private archives (Leonard-Barton, 1990). It can be used for different research purposes such as exploration, theory building, theory testing, and theory extension/refinement (Yin 2009).

Yin (2009) argued that research methods should not be arrayed hierarchically. Each research method can be used for all three purposes: exploratory, descriptive, or explanatory, though with advantages and disadvantages. He claimed that the choice of research method depends on three conditions:

- The type of research question posed;
- The extent of control an investigator has over actual behavioural events; and
- The degree of focus on contemporary as opposed to historical events. (Yin 2009, p.8)

He developed a matrix of "Relevant Situations for Different Research Strategies" illustrating and comparing the different natures of the five strategies (Table 6.1).

| Method | Form of Research Question | Requires Control of Behavioural Events? | Focuses on Contemporary Events? |
|---|---|---|---|
| **Experiment** | how, why | yes | yes |
| **Survey** | who, what, where, how many/much | no | yes |
| **Archival Analysis** | who, what, where, how many/much | no | yes/no |
| **History** | how, why | no | no |
| **Case Study** | how, why | no | yes |

**Table 6.1: Relevant Situations for Different Research Methods (Yin, 2003 & 2009)**

To examine which research methods to use, the issues summarized in the above matrix are discussed. Firstly, the research questions asked are in nature "what" questions. Secondly, this research aims to explore a social phenomenon without manipulating behaviour directly, precisely or systematically. In other words, it does not require any control of behavioural events. Thirdly, these research enquiries are

about people's perceptions of contemporary events. Both surveys and archival analyses are suitable research methods, according to Yin's criteria. However, this research involves an exploration of an area that has not been well studied. The existing documents, or other forms of material, may not fit the purpose of this research. In contrast, surveys can help to collect primary data on relevant topics.

Therefore, a survey is chosen to be the main research method.

## 6.3. Types of Survey

After deciding on the main research method, the techniques for collection of survey data need to be selected. Blaikie (2007) suggests five types of survey for social science research: structured interview, self-completion questionnaire, structured observation, content analysis and official/secondary statistics.

In a structured interview, each respondent is given exactly the same questions in the same order, to ensure that their replies can be aggregated. It is usually carried out in person or by telephone.

When using self-completion questionnaires, the respondents answer questions by completing the questionnaire themselves. It can be delivered and returned face-to-face, by post or online.

Structured observation is a technique in which the researcher strictly follows pre-determined rules for observing and recording participants' behaviours.

Content Analysis is specially used for analysing texts or other written materials, and seeks to quantify the content in terms of pre-determined categories.

Using official/secondary statistics means that the researcher is not directly involved in the data collection. It may contain quantitative data, as well as qualitative data.

However, since little attention was drawn on this issue in the literature, there is very little data that can be directly used in this research. Thus, only primary data will be collected and used.

## 6.4. Three Studies

Since each of the sub research questions investigates different subjects and topics, the source and type of data required are very different in nature. It is therefore decided to conduct three individual studies to answer each sub research question, i.e.

- Study 1 Retail Website Features
- Study 2 Online Customer Activities

- Study 3 Customer Experience and Repurchase Intentions.

When all these data are ready to use, they can be combined together for a further analysis that answers the main research question. In order to ensure each study fulfils its purposes, different types of survey may be adopted for each study. The details will be discussed further in Chapter 7.

## 6.5. Conclusion

This chapter has discussed and compared different research methods in social science research. A survey is chosen as the main research method. The features of five different types of survey were presented. Since each of the sub research questions has its own subject for investigation, it is proposed that three individual studies be condicted, followed by an overall analysis, in order to answer the main research question. The adoption of different types of survey for each individual study will be explained in the next chapter. Furthermore, some common issues for survey research are discussed and responses to these issues are provided.

# 7. Research Design

## 7.1. Introduction

The previous chapter set out the survey as the main research method. Different types of surveys were compared and some common issues for survey research were responded to.

In this chapter, the detailed designs of the three individual studies and the overall analysis are discussed. Therefore, this chapter covers the following four topics:

- Study 1 Retail Website Features;
- Study 2 Online Customer Activities;
- Study 3 Customer Experience & Repurchase Intentions;
- Principal Components Analysis.

## 7.2. Study 1 Retail Website Features

### 7.2.1. Purpose

The purpose of Study 1 is to discover and identify the features offered on retail websites. It aims to provide an initial framework of what customers experience on retail websites, and hence, to understand in what ways retail websites interact with their customers. The research question proposed for this study to answer is

**Sub Research Question 1**

What features are offered on retail websites?

### 7.2.1. Data Collection

Content analysis was selected as the data collection method for this study. According to Bryman (2008), content analysis is an approach to analysing documents and other visual evidence which seeks to quantify the content in a systematic and replicable manner. Bryman (?) claimed that the quantification process of the content is usually done by using predetermined categories, which in this research are the retail website features. However, the purpose of this study is to discover and identify what features are being offered on retail websites. It is only possible to name a few expected features, rather than provide a full list of all the features available as the predetermined categories prior to the data collection. Altheide (1996) outlined an 'ethnographic content analysis' approach which, in contrast to the traditional pure quantitative content analysis, allows the researcher to constantly revise the descriptions of already identified retail website features and add new ones to the list as they emerge during the analysis. This study adopts an ethnographic content analysis approach to collect data from retail websites. No predetermined retail website features are provided prior to the data collection.

The data collection was conducted by visiting a number of retail websites, simulating an actual shopping transaction on each of them without making payments, and noting down the encountered retail website features during the transactions. While the number of retail website features accumulated, the adoption frequency of each feature was also recorded.

A coding schedule is developed using Microsoft Excel to facilitate the recording of data (see Table 7.1).

| Descriptions of Features | Website 1 | Website 2 | Website 3 | … |
|---|---|---|---|---|
| Feature 1. … | | | | |
| Feature 2. … | | | | |
| Feature 3. … | | | | |
| … | | | | |

**Table 7.1 Study 1 – Coding Schedule**

### 7.2.2. Population and Sampling Frame

The population of interest for Study 1 was the retail websites that sell products or services to customers in the UK. This is determined by the research topic and context. Although, in terms of website features, there might be little difference between websites that sell to customers in the UK and websites that sell to customers in other countries, it might be difficult to collect data from non-UK customers at a later stage of this research, i.e. Study 2 & 3. Therefore, in order to produce more generalizable results, only websites that sell to UK customers were considered for data collection.

It may worth noting that websites that sell to customers in the UK may not be based or operating in the UK; and websites that are based or operating in the UK may not sell to customers in the UK, though this is less likely to happen compared to the former situation.

While considering which websites should be used for data collection, the researcher searched a few dominant web statistics suppliers: Alexa.com, hitwise.com, quantcast.com, nielsen.com, comScore.com, and compete.com. The researcher was specifically looking for a list of websites that has the potential to represent most retail websites that sell to UK customers. After comparing the resources available from those statistics suppliers, a report published by IMRG and hitwise.com in May 2009 was finally chosen as the source of data. It was an annually published report on the 100 most popular retail websites in the UK, as indicated by the number of visits in the month prior to the publication (IMRG-Hitwise 2009). The list contains the top 100 websites that sell goods and/or services within the IMRG Capgemini Index Classification[1].

[1] IMRG Capgemini Index Classification: Beer / wine / spirits; Books; CDs / tapes / records; Clothing / footwear / accessories; Computer hardware / peripherals / consumables; Consumer electronics; Digital downloads (e.g. music, software); Flowers; Food, beverages and household supplies; Furniture; Garden / DIY; Health and beauty; Home appliances (e.g. washing machines); Household goods (e.g. kitchenware, bedding); Jewellery / watches; Software; Sporting goods; Tickets (e.g. cinema, theatre, events); Toys; Travel (e.g. flights, holidays, hotels, car hire); Video games; Videos / DVDs.

The advantages of using this report are:

- popularity – it tracks popularity based on the number of visits that a website receive in a month;
- reliability – Hitwise sources data directly from ISP networks, instead of recruiting individual panel members. It anonymously monitors more people, and therefore reports on more websites, and further provides a more reliable outcome;
- convenience – rather than providing a list of mixed types of websites, this one focuses on online retailers only, hence it may potentially save a lot of time filtering out other types of websites.

A few limitations of the list were also identified:

- no actual statistical data were available for confirmation of the ranking;
- the report was based on data generated in one month (April, 2009), which would preferably be a longer period of time;
- it does not reflect the trend of which websites become more popular.

However, the purpose of selecting a list was to provide a number of websites for data collection and analysis, rather than confirming their existing statistical data or ranking. Therefore, this list is seen as a valid sampling frame.

### 7.2.3. Data Processing and Analysis

In terms of the findings of this study, a complete coding schedule should be sufficient, and no further analysis is required. However, to ensure the findings are usable in Study 3, i.e. the descriptions of the identified retail website features are understandable to customers, further testing and rephrasing of those descriptions may be necessary. However, this will be conducted when piloting Study 3 (see Section 7.4.4).

## 7.3. Study 2 Online Customer Activities

### 7.3.1. Purpose

The purpose of Study 2 is to gather customers' perceptions of the key activities they perform in online shopping transactions. It aims to provide some basic understanding as to what customers do on retail websites. The research question proposed for this study to answer is

**Sub Research Question 2**

What activities do customers perform on retail websites?

### 7.3.1. Data Collection

As this study aims to identify the online customer activities from the customers'

perspective, a semi-structured interview was selected as the data collection method for its ability to ask open questions as well as closed questions. It also brings the benefits of the possibility of producing rich data for this exploratory research, setting a context on the questions to help researchers and interviewees understand the situation, and consuming reasonable time and resources.

In order to minimise the memory-related bias that can occur in self-reports (Sudman and Bradburn 1974), each interviewee was asked to complete two online transactions (without making payments) prior to the actual questioning in the interview. One simulates a recent transaction that the interviewee has completed recently. The other requests that the candidate buys a desk lamp for no more than 30 pounds. The first transaction aimed to help the interviewee to recall a recent online shopping experience. The second transaction aimed to see if the interviewee would do anything significantly different when completing a relatively unfamiliar transaction. This measurement is also supported by the research of Craven and Nietzio (2007), which suggests that providing the interviewees with a task, instead of allowing them to randomly explore and recall what they did on a website would produce more comparable results.

During these two simulated transactions, notes were taken by the researcher about the interviewee's actions. When the transactions were finished, the interviewees

were asked to summarise the key stages that he or she went through during these transactions, and indicate if there are any other activities that they have performed in their past experience.

The whole list of interview questions is presented in Appendix B (page208). Each interview session took between 30 to 45 minutes. All conversations were recorded on a data recording sheet (see Appendix C on page 210) as well as with a digital recorder, in case some conversations needed to be revisited.

### 7.3.2. Sample Frame

A sample frame is a group of people who have the chance to be included in the sample (Fowler 2009). For this study, it consists all the full-time students enrolled at the University of Warwick (the university at which the researcher is enrolled as a Doctoral Researcher) during the 2009-2010 academic year (during which time this study was conducted). One reason for using these students is the researcher's accessibility to their contact details, i.e. email addresses. The University provides an email address for every enrolled student, and requests that all students check this regularly. The university's email system is easily accessible for the researcher. Besides, it is suggested that students are likely to be users of self-service technologies, such as the Internet (Bailey 2004; Elliot and Hall 2005). They are very likely to provide some valuable experiences in using retail websites. Although it may be the case that

using student samples might compromise the validity and reliability of the research due to their educational background and age differences compared to the main population (Bryman 2008; Churchill and Paul 1984; Wilson 1995), the negative effects of students are minimal in this research, as this research does not seek to represent a larger population.

Invitations were planned to be sent through the university email system to students in various departments at the University of Warwick. Each person that successfully participated in an interview session has received 5 pounds as a reward for participating. Despite the number of replies received, data collection stopped when data saturation was reached.

### 7.3.3. Data Analysis

The result of this study was expected to be a collection of statements of the perceived activities (key stages plus other activities). The statements with close meaning or descriptions were grouped and summarised as an activity by the researcher, and four other colleagues and friends who also shop on the Internet. The description and definition of the identified online customer activities were produced based on the interviewees' statements in this study.

### 7.3.4. Further Processing

In order to allow analyses of retail website features in the later stages, each retail website feature identified in Study 1 needs to be associated with one of the online customer activity identified in Study 2. This was planned to be achieved by working with other people who regularly shop online. Their experience of online shopping should provide them with familiarity of context, that is retail websites, and hence, should produce more reliable results. Each person was given the whole list of retail website features and online customer activities for them to work individually. Results were collected and summarised by the researcher when everyone finished the work. However, disagreements as to the associations were expected, in which case, the relevant issues were brought back to each person for clarification and discussion, until a generally accepted result was produced.

## 7.4. Study 3 Customer Experience & Repurchase Intentions

### 7.4.1. Purpose

The purpose of Study 3 is to explore the relationship, if there is any, between each retail website feature's influences on customer experience and repurchase intention. It aims to enable the researcher to develop a deeper understanding of websites' impacts on customers' experience and repurchase intention.

**Sub Research Question 3**

What is the relationship between customer experiences and repurchase intention?

### 7.4.2. Data Collection Method

In this study, a self-completion questionnaire is considered as a cost-effective data collection method in gathering large amount of responses. It was suggested that respondents should be in a relevant environment when completing the questionnaire (Meuter *et al.* 2000). Given the research context of the online retail services, this questionnaire is to be delivered and administrated through the Internet.

### 7.4.3. Questionnaire Design

The structure of the questionnaire can be divided into three parts, the introduction, transaction based questions, and demographic questions.

**The Introduction**

This section contains information on four issues, including the organisation that administrating this questionnaire, the purpose for this research study, what the respondents are expected to do, and the estimated time for finishing all the

questions.

**Transaction Based Questions**

In this questionnaire, the respondents are asked to answer the majority of questions based on one of their recent online transactions. It aims to help the respondents to recall the retail website features they came across and provide a more realistic evaluation on the features' influences on their shopping experience and repurchase intention. There are two types of transaction based questions.

The first type contains two questions. One question enquires about the classification of the products they have bought. The options provided are the twenty-two IMRG Capgemini Index Classifications (see section7.2.2 on page 78) plus an option of "others, please specify" with a text box available for the respondents to fill in freely. The respondents are allowed to select more than one classification, as the transaction may involve different products. The other question asks about the price range of the product range of the specific transaction, where 6 options are provided, i.e. £10 or less, £10.01 – £30, £30.01 – £70 , £70.01 – £150, £150.01 – £300, and £300.01 or more.

The second type enquires as to the respondent's perceptions of the retail website features' influences on their actual shopping experience (i.e. customer experience)

and intention to purchase again (repurchase intention) towards the online retailer (online retail service provider). An 11-point rating scale was adopted for the respondents to evaluate each retail website feature's influences on customer experience and repurchase intention. The left end of the scale is marked as "-5" which indicates that "This feature strongly detracted from my actual shopping experience with this retail website, or This feature strongly discouraged me to purchase again from this retail website". The middle point is marked as "0", which indicates that "This feature did not affect my actual shopping experience or my intention to purchase again". The right end of the scale is marked as "+5" which indicates that "This feature strongly enhanced my actual shopping experience with this retail website, or This feature strongly encouraged me to purchase again from this retail website". In addition, an option of "not applicable" is also provided for respondents to choose, in case they did not use or experience this feature during that specific transaction.

**Demographic Questions**

In this study, three issues were investigated under this section: gender, age, and frequency of online purchase.

### 7.4.4. Pilot Study

It is suggested that self-administrated questionnaires should always be subjected to

a pilot study before the main survey takes place. For this study, it is essential for the respondents to understand the description of each identified retail website feature. The main purpose of this pilot study is to test the structure and wording of the questionnaire and make sure everyone can understand the statements and perceive them in the same way (Table 7.2 shows the pilot and final version of the descriptions of retail website features). It did not aim to validate data to test the theory. The questionnaire was piloted with colleagues at the university, as well as friends as general online consumers. Comments were collected and applied to modify the questionnaire.

| Name | Description of Retail Website Feature | |
|---|---|---|
| | Pilot | Final |
| 1. keyword | Enables you to search for products with key words or catalogue numbers | The website enables you to search for products with key words or catalogue numbers. |
| 2. category | Enables you to browse products in detailed categories/departments | The website enables you to browse products in detailed categories/departments. |
| 3. interactive | Has interactive functions (e.g. auto drop down list of categories, suggestions of keywords when typing in search box, auto zoom in/out when mouse over pictures) | The website provides interactive functions (auto drop-down list of categories, suggestions of key words when typing in search box, auto zoom in/out when mouse over pictures, etc.). |
| 4. suggest alternative | Suggests alternative products (which you may buy instead of the one you are browsing) | The website automatically suggests alternative products (which you may buy instead of the one you are browsing). |
| 5. suggest additional | Suggests accessories of products (which you may buy together with the one you are browsing) | The website automatically suggests additional products (such as similar style products or accessories which you may buy together with the one you are browsing). |
| 6. highlight offer | Highlights products on special offer | The website highlights products on special offers. |
| 7. filter | Enables you to filter/select a list of products by pre-set attributes (e.g. brand, colour, size, etc.) | The website enables you to filter / select a list of products by pre-set attributes (brand, colour, size, etc.). |
| 8. sort | Enables you to sort a list of products into order (e.g. by price, by popularity, by relevance, etc.) | The website enables you to sort a list of products into order (by price, by popularity, by relevance, etc.). |
| 9. show number | Enables you to choose how many products to show on one page (e.g. 20, 50, all, etc.) | The website enables you to choose how many products to show on one page (20, 50, all, etc.). |
| 10. compare | Enables you to list the detailed specifications of a few selected products for comparison (usually available with technical products, e.g. laptops, digital cameras, etc.) | The website enables you to compare the detailed specifications of selected products on one page. |
| 11. save address | Enables you to save your address details with your account | The website enables you to save your address details with your account. |
| 12. save payment | Enables you save your payment details (e.g. credit/debit card, PayPal account, etc.) with your account | The website enables you to save your payment details (credit / debit card, PayPal account, etc.). |
| 13. express checkout | Enables you to make one-click/express payments using your saved address and payment details | The website enables you to make one-click / express payments using your saved address and payment details. |
| 14. 3rd party checkout | Directs you to third-party websites (e.g. PayPal, Google Checkout, WorldPay, NoChex, etc.) to make payments | The website provides you an option to make payment through a website that is not operated by your bank (PayPal, Google Checkout, NoChex, etc.). |
| 15. pay offline | Accepts payments by telephone, post, at local stores, or through any other offline channels | The website accepts payments by telephone, post, at local stores, or through any other offline channels. |
| 16. FAQs | Provides FAQs (Frequently Asked Questions) sections for you to find quick answers to your enquiries | The website provides information sections (FAQs, Help, etc.) for you to find quick answers to questions. |
| 17. email/form | Enables you to make enquiries by email or by filling an online enquiry form | The website enables you to make enquiries by email or filling an online enquiry form. |
| 18. live chat | Enables you to perform a live chat with customer service agents through instant messenger services | The website enables you to make enquiry by live chat (via typing) with customer service agents. |
| 19. forum | Provides an online forum where you can discuss relevant issues with customer service agents as well as other customers | The website provides an online forum where you you can discuss (via typing) relevant issues with customer service agents as well as other customers. |
| 20. ask offline | Accepts enquiries by telephone, post, at local stores, or through any other offline channels | The website accepts enquiries by telephone, post, at local stores, or through any other offline channels. |

**Table 7.2 Study 3 Description of Retail Website Features**

(see Appendix D on page 211 and Appendix E on page 215 for a full version of online questionnaires used in the pilot study and the main study)

### 7.4.5. Sample Frame and Sample Size

This study selected samples from two sample frames. It first attempted to collect data from real customers of an online retailer (specialized in female apparel accessories). However, due to the low response rate and the small sample size (see section 10.2 on page 107), it was decided to add an additional sample frame, i.e. full-time students enrolled at the University of Warwick (same as Study 2, see Section 7.3.2 on page 83).

Regarding the sample size for this study, different authors recommended different guidelines. Stevens (1996, p.72) recommended that 'for social science research, about 15 subjects per predictor are needed for a reliable equation', which suggests that in case of this research 300 respondents are needed. Tabachnick and Fidell (1996) provided a formula for calculating sample size requirements, taking into account the number of independent variables that you wish to use: $N > 50 + 8m$ (where m = number of independent variables), hence, 210 respondents should be enough for this research. However, it is also argued that "it is the absolute size of a sample that is important not its relative size" (Bryman 2008, p.179). He argued that the increase of precision of research is more noticeable before the sample size reaches 1,000 than after. He agreed that the larger the sample size is, the greater the precision (Hazelrigg, 2004), but the less cost efficient (Bryman 2008).

This study aimed to get as many responses as possible. The questionnaire was distributed through the university email system to students and by the online retailer to their customers.

### 7.4.6. Level of Measurement

In SPSS, variables are measured on three levels, nominal, ordinal and scale. The nominal level is the lowest of the three, which simply categorises the variable to be measured into one of a number of discrete categories. The ordinal level involves ranking the variable to be measured. The distance between rankings may or may not be equal. The scale level is the highest level of measurement, which involves being able to tell the distance between two stimuli and may include an absolute zero starting point. In this study, the retail website features' influences on customer experience and repurchase intention are measured on the scale level.

### 7.4.7. Invalid Cases

Two types of cases were considered as invalid in this study.

For each retail website feature, respondents are asked to evaluate the feature's influences on customer experience and repurchase intention. If the respondent did not use or experience that feature, then the respondent should mark "not applicable" on the customer experience scale, as well as the repurchase intention scale. The

respondent should not mark 'not applicable' on only one scale. If any of the respondents did, it could be that the respondent wants to say that the feature only affected my customer experience or repurchase intention. However, on each scale, the questionnaire is providing a "0" score meaning "This feature did not affect my actual shopping experience or my intention to purchase again", which is clearly stated in the instruction before that section of questions. In these cases, it is not possible for the researcher to determine whether the respondents want to say they did not use that feature, or the feature did not affect customer experience and/or repurchase intention. Therefore, these cases are considered to be invalid, and are removed from data analyses.

In case of any respondent marked "not applicable" for all the retail website features, the case will be considered invalid.

### 7.4.8. Parametric or Non-Parametric – Test of Normality

There are two types of statistical procedures described in many statistics books (Field 2009; Ho 2006), the parametric tests based on the assumption of normal distribution of sample, and non-parametric tests that makes no assumptions as to the distribution of data (Field 2009). In order to decide which test to use on the data collected, it is necessary to determine whether the distribution of data is normal. The Kolmogorov-Smirnov test will be used to confirm whether data is normally

distributed (Field 2009).

### 7.4.9. Correlation – Test of Relationships

There are generally two commonly used correlation coefficients: the Person product moment correlation coefficient (Pearson's r), and the Spearman rank order correlation coefficient (Spearman's rho). One major difference between those two procedures is that Pearson's r is based on the assumption of a normal distribution of data, and Spearman's rho is a non-parametric statistic. The method used in this study tests the correlation between retail website features' influence on customer experience and repurchase intention will be selected depends on the result of test for normality.

## 7.5. Principal Components Analysis

In order to answer the main research question, a principal components analysis (PCA) was performed based on data collected in Study 3 using SPSS. It aims to identify a number of groups of retail website features that appear to have similar pattern of influences on customer experience and repurchase intention. These retail website features that share the same pattern is classified as one type of retail website features. By knowing which retail website features share the same pattern, discussions can be carried out to produce accurate descriptions of each type or retail website features, and hence, to answer the main research question.

The aim of the PCA is to simplify a large number of correlated measures to a few representative factors that can be used for subsequent analysis. The PCA is based on the assumption that all variables are correlated to some degree. Therefore, the variables that share similar underlying dimensions should be highly correlated, and those variables that measure dissimilar dimensions should yield low correlations.

## 7.6. Structure of Research

The structure of this research and method for each step is summarised in Figure 7.1.

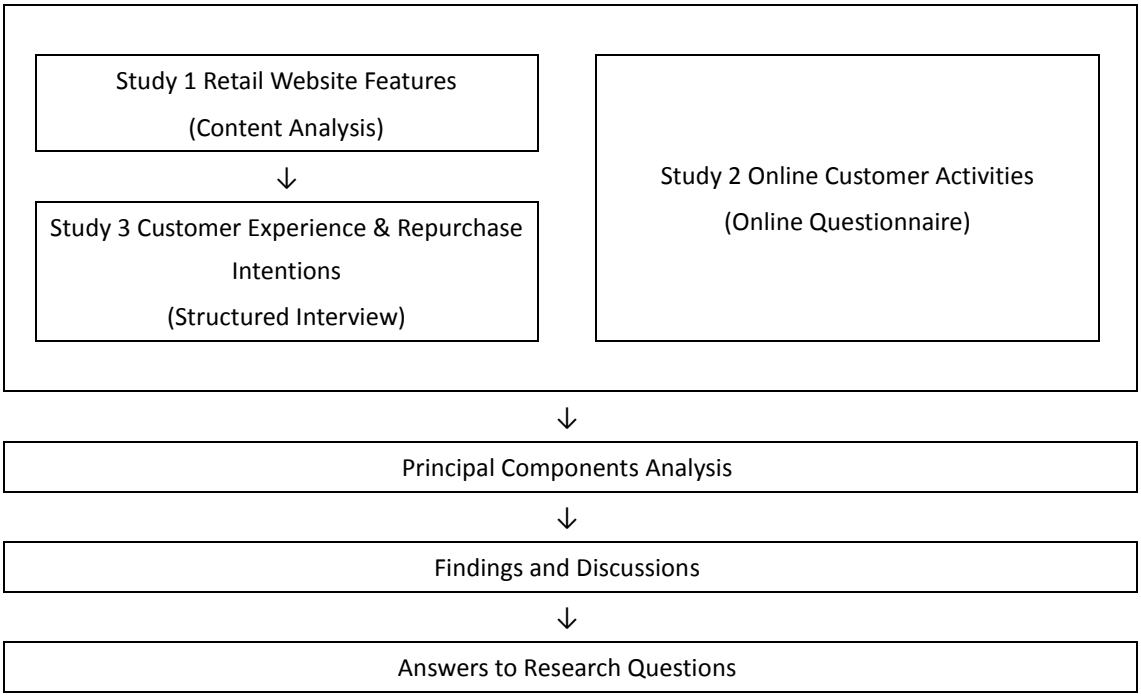


**Figure 7.1 Structure of Research**

# 8. Study 1 Retail Website Features

## 8.1. Introduction

The last two chapters have set out the design of this research. A survey was considered to be an appropriate data collection method. The whole research is split into three individual studies to answer each sub research question. This chapter presents the results of Study 1 Retail Website Features, and aims to develop a basic understanding of how retail websites interact with their customers, and more importantly, to prepare for the later stages of this research. Data will be discussed under the following topics:

- Data Collection and Processing;
- Websites Profile;
- Result.

## 8.2. Data Collection and Processing

As planned in Section 7.2 (page 76), 100 retail websites were visited. However, after an initial visitation, three types of websites were removed from the list of data collection:

- Websites selling tickets (e.g. movie or concert tickets) were removed because they usually require more specific information about the product, such as

date, time, movie names or destination, etc. This has created some difficulties in categorising some of the features. For example, a detailed search with all the specific information is very close to a category browsing feature.

- Websites selling mobile phone products usually apply different search options for different types of products (e.g. phones, tariffs, mobile broadband). The different categories of product seem to act independently, like separate websites. This also makes it difficult to determine and evaluate the website features on offer.
- Websites selling travel products (e.g. train/flight tickets, holiday packages) share both the above natures, and are removed from data collection list as well.

This leaves 63 websites on the list, where the simulated transactions were carried out.

However, it was found impossible to simulate transactions on three of the websites. One website no longer offered (or has never offered) an online shopping facility at the time of data collection. The other two required credit checks to create and register an account, so information on features only accessible after registration could not be collected. Thus, these three websites were also excluded from the data

collection and the coding schedule. The retail website features were therefore identified based on the simulated transactions of these 60 retail websites.

## 8.3. Websites Profile

The remaining 60 websites covered a wide range of products and services, including Beer / wine / spirits; Books; CDs / tapes / records; Clothing / footwear / accessories; Computer hardware / peripherals / consumables; Consumer electronics; Digital downloads (e.g. music, software); Flowers; Food, beverages and household supplies; Furniture; Garden / DIY; Health and beauty; Home appliances (e.g. washing machines); Household goods (e.g. kitchenware, bedding); Jewellery / watches; Software; Sporting goods; Toys; Video games; Videos / DVDs. Many of the websites sell products and/or services from more than one category.

## 8.4. Results

On the homepages, almost all the retail websites provided a keyword search box and some categories or department for browsing. Some websites offered suggestions while typing in the search box, or provided an auto-dropdown menu for the categories. After using either a search box or categories, the researcher was usually directed to the pages showing a list of products. On these list pages, the researcher was allowed to sort the products in order, using a few pre-defined criteria, select how many products to show on each page, choose product properties to shorten the

list, or pick a few products for a more detail comparison of specifications. When the researcher clicked on a product page, some websites showed related products on the sides or bottom of the page, which are either substitutes of the selected product or accessories of the selected product. After adding a product to the basket, the researcher was sometimes asked whether or not to save address and card details. Some websites allowed the researcher to make a 1-click payment based on the saved address and payment details. Others allowed the researcher to make payment through a third party website, by telephone or by post.

As the ways in which retail websites deal with customer enquiries were mentioned in the preliminary study, relevant sections of the websites were also investigated. It was found that these retail websites provided five different ways to deal with customer enquiries: FAQ sections for customers to look for answers by themselves, email address or enquiry form for the customers to fill in, live chat box that allows customers to type their enquiries and get an instant respond, online forum or community where customers can interact with service providers, as well as other customers, and/or telephone numbers or addresses for customers to send their enquiries.

Therefore, it was found that 20 retail website features were offered on these 60 retail websites. Their descriptions and frequencies are listed in Table 8.1.

| | Description of Retail Website Feature | Total | % |
|---|---|---|---|
| 1. keyword | Enables you to search for products with key words or catalogue numbers | 60 | 100% |
| 2. category | Enables you to browse products in detailed categories/departments | 60 | 100% |
| 3. interactive | Has interactive functions (e.g. auto drop down list of categories, suggestions of keywords when typing in search box, auto zoom in/out when mouse over pictures) | 50 | 83% |
| 4. suggest alternative | Suggests alternative products (which you may buy instead of the one you are browsing) | 27 | 45% |
| 5. suggest additional | Suggests accessories of products (which you may buy together with the one you are browsing) | 39 | 65% |
| 6. highlight offer | Highlights products on special offer | 43 | 72% |
| 7. filter | Enables you to filter/select a list of products by pre-set attributes (e.g. brand, colour, size, etc.) | 51 | 85% |
| 8. sort | Enables you to sort a list of products into order (e.g. by price, by popularity, by relevance, etc.) | 52 | 87% |
| 9. show number | Enables you to choose how many products to show on one page (e.g. 20, 50, all, etc.) | 31 | 52% |
| 10. compare | Enables you to list the detailed specifications of a few selected products for comparison (usually available with technical products, e.g. laptops, digital cameras, etc.) | 15 | 25% |
| 11. save address | Enables you to save your address details with your account | 52 | 87% |
| 12. save payment | Enables you save your payment details (e.g. credit/debit card, PayPal account, etc.) with your account | 25 | 42% |
| 13. express checkout | Enables you to make one-click/express payments using your saved address and payment details | 2 | 3% |
| 14. 3rd party checkout | Directs you to third-party websites (e.g. PayPal, Google Checkout, WorldPay, NoChex, etc.) to make payments | 2 | 3% |
| 15. pay offline | Accepts payments by telephone, post, at local stores, or through any other offline channels | 13 | 22% |
| 16. FAQs | Provides FAQs (Frequently Asked Questions) sections for you to find quick answers to your enquiries | 60 | 100% |
| 17. email/form | Enables you to make enquiries by email or by filling an online enquiry form | 48 | 80% |
| 18. live chat | Enables you to perform a live chat with customer service agents through instant messenger services | 3 | 5% |
| 19. forum | Provides an online forum where you can discuss relevant issues with customer service agents as well as other customers | 2 | 3% |
| 20. ask offline | Accepts enquiries by telephone, post, at local stores, or through any other offline channels | 51 | 85% |

**Table 8.1 Study 1 – Descriptions and Frequencies**

It appears that the feature 1. keyword, 2. category, and 16. FAQs are offered on all these sixty retail websites. In addition, another seven features are offered by more than 40 websites, i.e. 3. interactive, 6. highlight offer, 7. filter, 8. sort, 11. save address, 17. email/form, and 20. ask offline. These 9 features appear to be the most popular ones that are offered on retail websites.

Feature 4. suggest alternative, 5. suggest additional, 6. highlight offer, 9. show number, and 12. Save payment appear to be on the next level, and offered by more than 20, but less than 40 websites. These appear to be the less popular features from the retail websites' perspectives.

Feature 10. compare, 13. express checkout, 14. 3rd party checkout, 15. pay offline, 18. live chat, and 19. forum are the least popular features from the websites' perspective, and are offered by less than 20 websites. However, except for Feature 10. compare, all the other four features at this level are only offered by 2 or 3 websites.

## 8.5. Conclusion

This chapter reported the findings from Study 1 Retail Website Features. The study has identified 20 retail website features by investigating 60 of the most popular retail websites that sell a wide range of products and services. The descriptions and frequencies of each of the identified retail website features were presented as a result of this study. Therefore, "Sub Research Question 1: What features are offered on retail websites?" is answered.

# 9. Study 2 Online Customer Activities

## 9.1. Introduction

The previous chapter reported the operations of data collection in Study 1 on retail website features. Twenty retail website features were identified. This chapter reports the results of Study 2 online customer activities and associate the retail website features identified in Study 1 with one of the online customer activities. Issues will be discussed under the following topics.

- Response Rate and Data Saturation;
- Respondent Profile;
- Online Customer Activities;
- Retail Website Features and Online Customer Activities.

## 9.2. Response Rate and Data Saturation

The invitation email was sent out to students in eight departments of different subjects at the University, including Chemistry, Comparative American Studies, Economics, English and Comparative Literary Studies, History, Institute of Education, Mathematics and School of Law. Many students replied and attended the interview sessions. However, the total number of replies was not recorded, as the replying emails were still coming in when data saturation was reached after 52 interviews.

## 9.3. Respondent Profile

The profile of interviewees is given in Table 9.1. The number of male and female interviewees was well balanced, both representing 50% of the sample. All the interviewees were aged between 18 and 23 except for one, at 35. This also shows that the sample spread almost evenly across the first three years of study, with only 3 attending their 4th year.

| | Frequency | Proportion |
|---|---|---|
| **Gender** | | |
| Male | 26 | 50% |
| Female | 26 | 50% |
| **Age** | | |
| 18 | 6 | 11.5% |
| 19 | 13 | 25.0% |
| 20 | 12 | 23.1% |
| 21 | 15 | 28.8% |
| 22 | 2 | 3.8% |
| 23 | 3 | 5.8% |
| 35 | 1 | 1.9% |
| **Year of Study** | | |
| 1 | 18 | 34.6% |
| 2 | 17 | 32.7% |
| 3 | 14 | 26.9% |
| 4 | 3 | 5.8% |

**Table 9.1 Study 2 – Respondent Profile**

## 9.4. Online Customer Activities

When the interviewees were asked about the key stages and other activities they had experienced in online shopping transactions, they used many different words to describe them. However, it appears that most of the statements fell into four categories:

1) Identify a broad range of products
2) Compare details and make decisions
3) Process delivery and payment information
4) Find answers to questions

Therefore, four online customer activities were identified, each of which was given a one-word description as the name of the activity, i.e.

1) Search – Identify a broad range of products;
2) Compare – Compare details and make decision;
3) Checkout – Process delivery and payment information;
4) Enquire – Find answers to questions.

## 9.5. Retail Website Features and Online Customer Activities

Following the identification of twenty retail website features in Study 1 (see Table 8.1 on page 100) and the four online customer activities, they need to be associated so as to enable the analysis of the retail website features within their associated online customer activities. This work was augmented by working with four other colleagues and friends who regularly shop online. Each person was given the full list of retail website features and online customer activities to work on individually. The results were collected and compared by the researcher. Differences between these results

were discussed between the researcher and each person. The generally agreed result is presented in Table 9.2.

| Retail Website Features | Online Customer Activities |
|---|---|
| 1. keyword | Search |
| 2. category | Search |
| 3. interactive | Search |
| 4. suggest alternative | Search |
| 5. suggest additional | Search |
| 6. highlight offer | Search |
| 7. filter | Compare |
| 8. sort | Compare |
| 9. show number | Search |
| 10. compare | Compare |
| 11. save address | checkout & pay |
| 12. save payment | checkout & pay |
| 13. express checkout | checkout & pay |
| 14. 3rd party checkout | checkout & pay |
| 15. pay offline | checkout & pay |
| 16. FAQs | Enquire |
| 17. email/form | Enquire |
| 18. live chat | Enquire |
| 19. forum | Enquire |
| 20. ask offline | Enquire |

**Table 9.2 Retail Website Features in Activities**

## 9.6. Conclusion

This chapter reported the findings from Study 2 Online Customer Activities. Data collection stopped after 52 interviews as data saturation was reached. Four online customer activities (Search, Compare, Checkout, and Enquire) were identified by grouping the collected statements on activities from interviewees. Hence, the “Sub Research Question 2: What activities do customers perform on retail websites?” is answered.

In addition, in order to allow further analysis of retail website features, each retail website feature was associated with an online customer activity.

# 10. Study 3 Customer Experience and Repurchase Intention

## 10.1. Introduction

The last two chapters reported the findings from Study 1 and 2, which have identified the Retail Website Features and Online Customer Activities. This chapter presents the findings in Study 3 Customer Experience and Repurchase Intentions. Data is discussed under the following topics.

- Response Rate;
- Respondents Profile;
- Descriptive Results;
- Tests of Normality;
- Correlations.

## 10.2. Response Rate

Invitation emails were sent to 15,897 students who were studying at the University of Warwick during the period of this study. During the two weeks of the survey distribution, 2,539 responses were received, representing a response rate of 15.7%. However, among these responses, 1,955 (77%) were complete. Following the removal of invalid cases by the criteria discussed in section 7.4.7 (page 92), 1,680

complete and valid responses remained. This is considered as a large and satisfactory sample to use for this study (Figure 10.1).

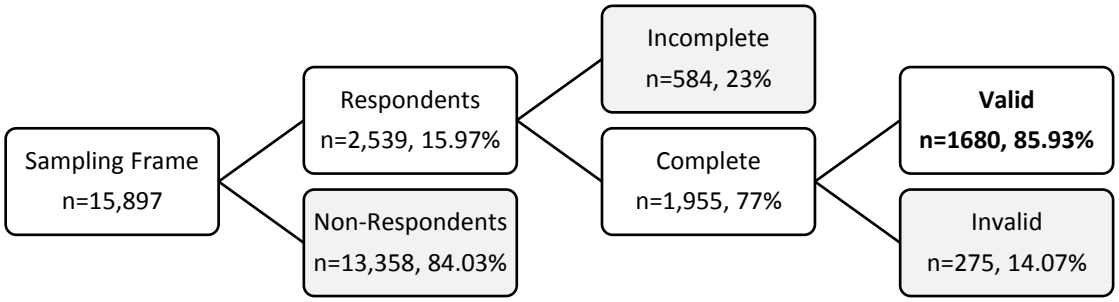


**Figure 10.1 Study 3 – Response Structure (students)**

At the same time, 9,722 customers of a retail website were also invited to complete the questionnaire. However, only 361 responses were received, which represents a much lower response rate of 3.71%, compared to the students sampling frame. Among these responses, 276 (76.45%) were complete and 233 were valid (Figure 10.2).

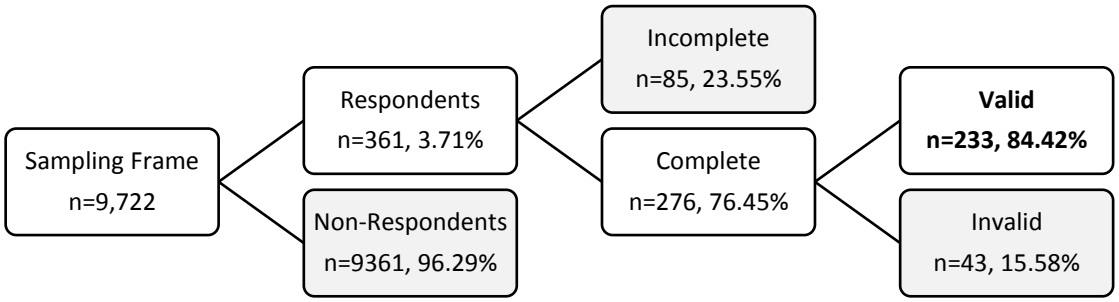


**Figure 10.2 Study 3 – Response Structure (customers)**

## 10.3. Respondents Profile

The profile of respondents who provided complete and valid data is presented in Table 10.1. It shows the transaction value is distributed similarly between the two samples, students and customers. However, the data distribution of gender, age group and online purchase frequency are very differently.

| | Students | | Customers | |
|---|---|---|---|---|
| | Frequency | Proportion | Frequency | Proportion |
| **Transaction Value** | | | | |
| £10 or less | 288 | 17.1% | 47 | 20.2% |
| £10.01 – £30 | 633 | 37.7% | 96 | 41.2% |
| £30.01 – £70 | 427 | 25.4% | 44 | 18.9% |
| £70.01 – £150 | 172 | 10.2% | 21 | 9.0% |
| £150.01 – £300 | 95 | 5.7% | 15 | 6.4% |
| £300.01 or more | 65 | 3.9% | 10 | 4.3% |
| **Gender** | | | | |
| Male | 827 | 49.2% | 58 | 24.9% |
| Female | 853 | 50.8% | 175 | 75.1% |
| **Age** | | | | |
| 17 or under | 7 | 0.4% | 1 | 0.4% |
| 18 – 24 | 1526 | 90.8% | 21 | 9.0% |
| 25 – 34 | 125 | 7.4% | 74 | 31.8% |
| 35 – 44 | 20 | 1.2% | 65 | 27.9% |
| 45 – 54 | 1 | 0.1% | 44 | 18.9% |
| 55 or above | 1 | 0.1% | 28 | 12.0% |
| **Number of Online Purchase in the Last 12 Months** | | | | |
| 0 | 2 | 0.1% | 0 | 0% |
| 0 – 10 | 701 | 41.7% | 32 | 13.7% |
| 11 – 20 | 564 | 33.6% | 51 | 21.9% |
| 21 – 50 | 336 | 20.0% | 85 | 36.5% |
| 51 or more | 77 | 4.6% | 64 | 27.9% |

**Table 10.1 Study 3 – Respondents Profile**

In the student sample, male and female respondents were well balanced, representing 49.2% and 50.8% of the total sample. In the customer data set, female respondents account for 75.1% of the total sample, which is about three times of the number of male respondents (24.9%). Given that the customers are from an online retailer who specialises in female apparel accessorises, this unbalanced sample seems reasonable.

The majority of student respondents (90.8%) were aged between 18 and 24, which is

common for university students. Compared to the student sample, the customer sample appears to be distributed more evenly among age groups, with 0.4% being under the age of 17, 9% aged between 18 and 24, 31.8% aged between 25 and 34, 27.9% aged between 35 and 44, 18.9% aged between 45 and 54, and 12% aged above 55. This is considered to be representative of the general online shopping population in the UK.

Table 10.1 also shows that the student respondents shopped online less frequently than the customer respondents. Many (41.7%) student respondents shopped online 1 to 10 times in the last 12 months. In contrast, 36.5% of the customer respondents shopped online 21 to 50 times during the same period. Only 4.6% of the student sample reported the number of online purchases in the last 12 months as more than 51; however, 27.9% of the customer sample reported the same.

## 10.4. Descriptive Results

The descriptive results of the data collected from students and customers are presented in Table 10.2 and Table 10.3 respectively. These show the valid and missing case numbers, the mean, mode and standard deviation of each retail website feature's perceived influence on customer experience and repurchase intention. It appears that all the identified retail website features were perceived to have a positive influence on customer experience as well as on repurchase intention.

Descriptive Results (students)

| Retail Website Features | N | | Customer Experience | | | Repurchase Intention | | |
|---|---|---|---|---|---|---|---|---|
| | Valid | Missing | Mean | Mode | Std. Deviation | Mean | Mode | Std. Deviation |
| 1. keyword | 1643 | 37 | 3.25 | 5 | 1.725 | 3.06 | 5 | 1.800 |
| 2. category | 1654 | 26 | 3.31 | 5 | 1.686 | 3.09 | 5 | 1.772 |
| 3. interactive | 1579 | 101 | 2.58 | 5 | 2.063 | 2.34 | 5 | 2.080 |
| 4. suggest alternative | 1575 | 105 | 2.33 | 5 | 2.180 | 2.11 | 0 | 2.113 |
| 5. suggest additional | 1591 | 89 | 2.14 | 5 | 2.222 | 1.93 | 0 | 2.148 |
| 6. highlight offer | 1597 | 83 | 2.73 | 5 | 1.971 | 2.61 | 5 | 1.950 |
| 7. filter | 1523 | 157 | 2.94 | 5 | 1.979 | 2.66 | 5 | 1.992 |
| 8. sort | 1601 | 79 | 3.27 | 5 | 1.949 | 2.94 | 5 | 1.986 |
| 9. show number | 1571 | 109 | 2.54 | 5 | 2.196 | 2.14 | 0 | 2.119 |
| 10. compare | 1381 | 299 | 1.89 | 3 | 2.353 | 1.86 | 0 | 2.147 |
| 11. save address | 1637 | 43 | 2.73 | 5 | 2.170 | 2.61 | 5 | 2.164 |
| 12. save payment | 1616 | 64 | 2.27 | 5 | 2.585 | 2.22 | 5 | 2.504 |
| 13. express checkout | 1515 | 165 | 2.17 | 5 | 2.571 | 2.01 | 5 | 2.520 |
| 14. 3rd party checkout | 1354 | 326 | 1.58 | 0 | 2.545 | 1.51 | 0 | 2.400 |
| 15. pay offline | 1120 | 560 | .48 | 0 | 2.392 | .70 | 0 | 2.231 |
| 16. FAQs | 1632 | 48 | 2.58 | 5 | 2.024 | 2.34 | 5 | 2.055 |
| 17. email/form | 1567 | 113 | 2.39 | 5 | 2.077 | 2.24 | 0 | 2.075 |
| 18. live chat | 1099 | 581 | .90 | 0 | 2.759 | 1.22 | 0 | 2.515 |
| 19. forum | 1132 | 548 | .75 | 0 | 2.367 | .90 | 0 | 2.196 |
| 20. ask offline | 1335 | 345 | 1.41 | 0 | 2.263 | 1.39 | 0 | 2.156 |

**Table 10.2 Study 3 – Descriptive Results (students)**

Descriptive Results (customers)

| Retail Website Features | N | | Customer Experience | | | Repurchase Intention | | |
|---|---|---|---|---|---|---|---|---|
| | Valid | Missing | Mean | Mode | Std. Deviation | Mean | Mode | Std. Deviation |
| 1. keyword | 230 | 3 | 3.8 | 5 | 1.589 | 3.65 | 5 | 1.646 |
| 2. category | 230 | 3 | 3.75 | 5 | 1.582 | 3.66 | 5 | 1.58 |
| 3. interactive | 208 | 25 | 2.86 | 5 | 2.319 | 2.82 | 5 | 2.362 |
| 4. suggest alternative | 215 | 18 | 2.73 | 5 | 2.347 | 2.76 | 5 | 2.256 |
| 5. suggest additional | 217 | 16 | 2.86 | 5 | 2.182 | 2.85 | 5 | 2.191 |
| 6. highlight offer | 218 | 15 | 2.81 | 5 | 2.167 | 2.84 | 5 | 2.177 |
| 7. filter | 219 | 14 | 3.47 | 5 | 1.984 | 3.43 | 5 | 1.997 |
| 8. sort | 219 | 14 | 3.73 | 5 | 1.728 | 3.66 | 5 | 1.736 |
| 9. show number | 219 | 14 | 3.54 | 5 | 1.933 | 3.47 | 5 | 1.947 |
| 10. compare | 202 | 31 | 2.67 | 5 | 2.338 | 2.8 | 5 | 2.233 |
| 11. save address | 213 | 20 | 3.28 | 5 | 2.082 | 3.24 | 5 | 2.071 |
| 12. save payment | 209 | 24 | 3.02 | 5 | 2.496 | 2.99 | 5 | 2.515 |
| 13. express checkout | 203 | 30 | 2.91 | 5 | 2.615 | 2.97 | 5 | 2.495 |
| 14. 3rd party checkout | 206 | 27 | 3.13 | 5 | 2.578 | 3.16 | 5 | 2.54 |
| 15. pay offline | 171 | 62 | 1.44 | 0 | 2.886 | 1.86 | 0 | 2.697 |
| 16. FAQs | 225 | 8 | 3.3 | 5 | 2.106 | 3.18 | 5 | 2.213 |
| 17. email/form | 222 | 11 | 3.36 | 5 | 2.076 | 3.32 | 5 | 2.124 |
| 18. live chat | 156 | 77 | 1.53 | 0 | 2.809 | 1.88 | 0 | 2.574 |
| 19. forum | 164 | 69 | 1.34 | 0 | 2.777 | 1.68 | 0 | 2.69 |
| 20. ask offline | 181 | 52 | 1.86 | 5 | 2.794 | 2.17 | 5 | 2.643 |

**Table 10.3 Study 3 – Descriptive Results (customers)**

By comparing the mean values of the influence of each retail website feature on customer experience and repurchase intention in the two samples, it was found that the top three and the bottom three retail website features are exactly the same in the two samples (i.e. Top three: 1. keyword, 2. category, and 8. sort; Bottom three: 15. pay offline, 18. live chat, and 19. forum). It also shows that the bottom three features are perceived to have a more positive influence on repurchase intention than on customer experience by both the student and customer sample. These indicate that the two samples share some common perceptions on these retail website features. However, it also shows that in the customer sample, six more retail website features (i.e. 4. suggest alternative, 6highlight offer, 10. compare, 13. express checkout, 14. 3rd party checkout, 20. ask offline) are perceived to have a more positive influence on repurchase intention than on customer experience, which means the two sample also have some different perceptions.

The mode value shows the most frequently selected score for each retail website feature's influences on customer experience and repurchase intention. It shows that in both student and customer samples, the mode value of a retail website feature's influence on customer experience is always greater than, or equal to its influence on repurchase intention. This might suggest that the retail website features with positive influence on customer experience do not always have the same effect on repurchase intention. However, it may also suggest that for retail website features,

having a positive influence on customer experience is a prerequisite for having a positive influence on repurchase intention.

The standard deviation figures represent the range of scores that each retail website feature received from respondents. The higher the value is, the more disagreements respondents have on a retail website feature's influence on customer experience and repurchase intention, which suggests that offering the retail website feature has a higher risk of providing a different customer experience and repurchase intention. On the other hand, if the value is relatively small, the respondents are more likely to be influenced in the same way by a retail website feature.

Although the above issues are not of main concern of this research, they have revealed and suggested some interesting questions for future studies

## 10.5. Tests of Normality

Many statistical measurements are based on the assumption of the distribution of the sample. i.e. whether it is normally distributed or not. Thus, Kolmogorov-Smirnov tests were performed on both the student and customer samples, and are presented in Table 10.4. The result shows that both samples are significantly non-normally distributed. Thus, further tests based on these two samples should make no assumption on normal distribution.

| Retail Website Features | Students | | | Customers | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| **1. keyword CE** | .189 | 1643 | .000 | .252 | 230 | .000 |
| **2. category CE** | .198 | 1654 | .000 | .229 | 230 | .000 |
| **3. interactive CE** | .148 | 1579 | .000 | .210 | 208 | .000 |
| **4. suggest alternative CE** | .149 | 1575 | .000 | .173 | 216 | .000 |
| **5. suggest additional CE** | .137 | 1591 | .000 | .188 | 217 | .000 |
| **6. highlight offer CE** | .164 | 1597 | .000 | .193 | 218 | .000 |
| **7. filter CE** | .180 | 1523 | .000 | .237 | 219 | .000 |
| **8. sort CE** | .207 | 1601 | .000 | .276 | 219 | .000 |
| **9. show number CE** | .160 | 1571 | .000 | .270 | 220 | .000 |
| **10. compare CE** | .133 | 1381 | .000 | .181 | 203 | .000 |
| **11. save address CE** | .151 | 1637 | .000 | .234 | 213 | .000 |
| **12. save payment CE** | .153 | 1616 | .000 | .241 | 209 | .000 |
| **13. express checkout CE** | .153 | 1515 | .000 | .244 | 202 | .000 |
| **14. 3rd party checkout CE** | .142 | 1354 | .000 | .254 | 205 | .000 |
| **15. pay offline CE** | .246 | 1120 | .000 | .185 | 170 | .000 |
| **16. FAQs CE** | .140 | 1632 | .000 | .259 | 224 | .000 |
| **17. email/form CE** | .135 | 1567 | .000 | .255 | 221 | .000 |
| **18. live chat CE** | .173 | 1099 | .000 | .185 | 155 | .000 |
| **19. forum CE** | .209 | 1132 | .000 | .190 | 163 | .000 |
| **20. ask offline CE** | .171 | 1335 | .000 | .170 | 180 | .000 |
| **1. keyword RI** | .185 | 1643 | .000 | .237 | 230 | .000 |
| **2. category RI** | .183 | 1654 | .000 | .225 | 230 | .000 |
| **3. interactive RI** | .129 | 1579 | .000 | .197 | 208 | .000 |
| **4. suggest alternative RI** | .142 | 1575 | .000 | .181 | 216 | .000 |
| **5. suggest additional RI** | .132 | 1591 | .000 | .191 | 217 | .000 |
| **6. highlight offer RI** | .152 | 1597 | .000 | .201 | 218 | .000 |
| **7. filter RI** | .152 | 1523 | .000 | .225 | 220 | .000 |
| **8. sort RI** | .173 | 1601 | .000 | .260 | 220 | .000 |
| **9. show number RI** | .175 | 1571 | .000 | .240 | 220 | .000 |
| **10. compare RI** | .137 | 1381 | .000 | .193 | 203 | .000 |
| **11. save address RI** | .151 | 1637 | .000 | .231 | 213 | .000 |
| **12. save payment RI** | .149 | 1616 | .000 | .234 | 209 | .000 |
| **13. express checkout RI** | .140 | 1515 | .000 | .236 | 203 | .000 |
| **14. 3rd party checkout RI** | .179 | 1354 | .000 | .261 | 206 | .000 |
| **15. pay offline RI** | .252 | 1120 | .000 | .176 | 171 | .000 |
| **16. FAQs RI** | .132 | 1632 | .000 | .246 | 225 | .000 |
| **17. email/form RI** | .130 | 1567 | .000 | .231 | 222 | .000 |
| **18. live chat RI** | .194 | 1099 | .000 | .197 | 156 | .000 |
| **19. forum RI** | .221 | 1132 | .000 | .197 | 164 | .000 |
| **20. ask offline RI** | .197 | 1335 | .000 | .173 | 181 | .000 |

**Table 10.4 Study 3 – Kolmogorov-Smirnov Test of Normality**

## 10.6. Correlations

As the data in this study is non-normally distributed (see section 7.4.8 on page 93 and section 10.5 on page 114), a non-parametric statistic of Spearman's correlation coefficient was used to calculate the correlations between the perceived influences of each retail website feature on customer experience and repurchase intention (Table 10.5).

**Spearman's rho Correlation Coefficient**

| Retail Website Features | Students | | | Customers | | |
|---|---|---|---|---|---|---|
| | Spearman's rho | N | Sig. (2-tailed) | Spearman's rho | N | Sig. (2-tailed) |
| **1. keyword** | .736* | 1643 | .000 | .765* | 230 | .000 |
| **2. category** | .795* | 1654 | .000 | .828* | 230 | .000 |
| **3. interactive** | .830* | 1579 | .000 | .895* | 208 | .000 |
| **4. suggest alternative** | .768* | 1575 | .000 | .848* | 215 | .000 |
| **5. suggest additional** | .811* | 1591 | .000 | .844* | 217 | .000 |
| **6. highlight offer** | .779* | 1597 | .000 | .850* | 218 | .000 |
| **7. filter** | .826* | 1523 | .000 | .882* | 219 | .000 |
| **8. sort** | .781* | 1601 | .000 | .832* | 219 | .000 |
| **9. show number** | .781* | 1571 | .000 | .858* | 219 | .000 |
| **10. compare** | .838* | 1381 | .000 | .846* | 202 | .000 |
| **11. save address** | .800* | 1637 | .000 | .875* | 213 | .000 |
| **12. save payment** | .809* | 1616 | .000 | .918* | 209 | .000 |
| **13. express checkout** | .855* | 1515 | .000 | .920* | 203 | .000 |
| **14. 3rd party checkout** | .835* | 1354 | .000 | .909* | 206 | .000 |
| **15. pay offline** | .775* | 1120 | .000 | .769* | 171 | .000 |
| **16. FAQs** | .829* | 1632 | .000 | .906* | 225 | .000 |
| **17. email/form** | .830* | 1567 | .000 | .894* | 222 | .000 |
| **18. live chat** | .818* | 1099 | .000 | .831* | 156 | .000 |
| **19. forum** | .800* | 1132 | .000 | .854* | 164 | .000 |
| **20. ask offline** | .818* | 1335 | .000 | .829* | 181 | .000 |

*. Correlation is significant at 0.01 level (2-tailed).

**Table 10.5 Study 3 – Spearman's rho Correlation Coefficients**

The minimum value of the obtained coefficients is .736 for student sample and .765 for customer sample. The significance for all correlation coefficients is .000, which is

less than .05 (i.e. $p<.05$). Therefore, it may be concluded that there are significant positive relationships between retail website features' influences on customer experience and repurchase intention. In other words, if a retail website feature has a positive influence on customer experience, it is likely to have a positive influence on customer's repurchase intention as well.

## 10.7. Conclusion

This chapter has presented the findings from a statistical analysis on data collected in Study 3. The descriptive results show some interesting issues which may be further studied in future research. It is found that the data collected are non-normally distributed, thus providing a basic assumption for further statistical analysis. Also, a positive correlation between retail website features' influence on customer experience and repurchase intention was identified. It supports the idea that better customer experience may lead to higher repurchase intention. Thus, the answer to "Sub Research Question 3: What is the relationship between customer experiences and repurchase intention?" is that there is a positive correlation between customer experience and repurchase intention.

# 11. Principle Components Analysis

## 11.1. Introduction

The last three chapters presented the data collected in the three studies, twenty retail website features and four online customer activities were identified, and a positive correlation between customer experience and repurchase intention was established.

In order to answer the main research question, further analysis is needed to identify the types of retail website features in terms of the way of influencing customer experience and repurchase intention based on the data collected in Study 3. In order to do this, it is necessary to first identify the retail website features that share the same underlying dimensions. Principle component analysis (PCA) was employed as a factor analysis technique for this further analysis.

This chapter first explains the procedure of the PCA performed on data collected in Study 3, using SPSS. The output tables and their interpretation are presented to allow reproduction of the analysis. Finally, the results of the exploratory analysis are concluded. Thus, this chapter covers issues under the following topics:

- Procedures of PCA;

- Output of PCA and Reliability Analysis;
- Result.

## 11.2. Procedures of PCA

This section explains the detailed procedures of the PCA performed on data collected in Study 3. It first identifies the terms used in this analysis, i.e. the variables and factors. It then explains the process of the analysis, and the reliability test performed on the results of the analysis. Finally, the data categories used for this analysis are introduced.

### 11.2.1. Variables and Factors

For this research, a variable is a retail website feature's influences on customer experience or repurchase intention, as reported by the questionnaire respondents in Study 3; a factor represents the underlying dimension of a number of correlated variables, which in this research is the shared underlying dimension of a number of retail website features (that appear to influence customer experience or repurchase intention in similar ways).

### 11.2.2. Process of Principle Component Analysis

In SPSS, the output of a PCA can be summarised in three parts, preliminary analysis, factor extraction, and factor rotation. The preliminary analysis tests the assumption

of PCA and the sample adequacy. Factor extraction identifies the important factors and their associated variables. However, the result of the initial extraction is usually difficult to interpret, as it ignores the fact that variables may be cross loaded on more than one factor. The factor rotation solves this problem by identifying the variables that load on only one factor, and hence, provides a more meaningful and interpretable result.

**Preliminary Analysis**

The output of the preliminary analysis includes two tables: Correlation Matrix (see Table 11.2 on page 129 for example) and KMO and Bartlett's Test (see Table 11.3 on page 129 for example).

The correlation matrix aims to confirm the assumption of PCA that at least some variables are correlated to each other. Usually, PCA is considered to be appropriate when the correlation coefficients between some variables are greater than 0.33 (Ho 2006).

The KMO and Bartlett's Test table includes the results of two tests: the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) and the Bartletts's test of sphericity. Both tests aims to determine whether significant correlations exist among at least some of the variables.

The KMO statistic varies between 0 and 1. A value of 0 suggests that the partial correlation is large, compared to the sum of correlations, which implies that PCA is not appropriate. A value close to 1 indicates that the patterns of correlations are relatively compact, so that the PCA should yield reliable factors. It is suggested that a value of 0.5 is acceptable, values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great, and values above 0.9 are superb (Hutcheson and Sofroniou 1999; Kaiser 1974).

The Bartlett's test of sphericity serves the same purpose as the KMO, but through a different approach. It tests the null hypothesis that the correlation matrix is an identity matrix, i.e. all the diagonal values are 1 and all the off-diagonal values are 0. A significant result (significance value less than .05) rejects the null hypothesis, and confirms that the PCA is appropriate.

**Factor Extraction**

The results of factor extraction are presented in three tables, Communalities (see Table 11.4 on page 130 for example), Total Variance Explained (see Table 11.5 on page 131 for example) and Component Matrix (see Table 11.6 on page 131 for example).

The Communalities table presents the communality of each variable before and after extraction. The PCA technique assumes that all variance is a common variance. Thus the communality of every variable before extraction is 1 (presented in the Initial column). Once the factors are extracted, the actual communalities of variables are calculated (presented in the Extraction column).

The Total Variance Explained table shows the eigenvalues associated with each extracted factor (component) before extraction, after extraction and after rotation. Before extraction, the number for factors is the same as the number of variables. The eigenvalues associated with each factor represents the variance explained by that factor. After extraction, SPSS retains only factors with eigenvalues of greater than 1 by default. However, the expected number of extracted factors can be specified if it is known before the analysis. The retained factors are then used for rotation, which aims to optimize the factor structure and equalize the importance of the extracted factors.

The Component Matrix lists the loadings of each variable onto each extracted factor before rotation. Although all loadings were calculated by default in SPSS, it is suggested that values of less than 0.33 in the output (a variable with a loading of 0.33 or higher on a factor indicates that approximately 10% or more of the variance in that variable is accounted for by its common factor) be suppressed (Ho 2006).

**Factor Rotation**

There are two classes of factor rotation method: orthogonal and oblique. The orthogonal rotation assumes that the factors are independent and maintains the reference axes of the factors at 90 degree. In contrast, the oblique rotation allows for correlated factors, and does not require the reference axes of the factors to be maintained at 90 degree. It is suggested that orthogonal rotation should be adopted if the aim of research is to reduce the data, regardless of how meaningful the resulting factors may be, and there is reason to believe that the factors are uncorrelated; Oblique rotation should be used if the research aims to discover theoretically meaningful factors, and there is reason to believe that the factors may be correlated (Ho 2006). As this analysis aims to identify theoretically meaningful factors, the Oblique rotation is selected as the rotation method.

The oblique rotation produces two tables of results: the Pattern Matrix (see Table 11.7 on page 132) and the Structure Matrix (see Table 11.8 on page 133 ). Some researchers only report and interpret the Pattern Matrix, as it shows uncontaminated correlations between variables and factors, and provides information about the unique contribution of a variable to a factor (Field 2009; Ho 2006). However, it is also suggested that the Structure Matrix is useful for double checking the result of the Pattern Matrix (Graham *et al.* 2003). In this research, both

matrixes are reported, but the interpretation is based on the Pattern Matrix.

The final part of the output is a Component Correlation Matrix (see Table 11.9 on page 133 for example), which shows the correlation coefficients between factors. If all the correlation coefficients are 0, it is reasonable to say that all factors are independent, and that the orthogonal rotation should be used. Otherwise, if the factors are correlated to some degree, the oblique rotation is appropriate. In other words, this matrix further confirms whether the method selected for rotation is appropriate.

### 11.2.3. Dealing with Cross-loaded Variables

Although factor rotation may produce more meaningful and interpretable results, there may still be some variables cross-loaded on one or more factors, possibly due to the correlations between factors. Three ways of handling significant cross-loadings are suggested:

- If the matrix indicates many significant cross-loadings, this may suggest further commonality between the cross-loaded variables and the factors. The researcher may decide to rerun factor analysis, stipulating a smaller number of factors to be extracted.
- Examine the wording of the cross-loaded variables, and based on their face-validity, assign them to the factors that they are most

conceptually/logically representative of.

- Delete all cross-loaded variables. This will result in “clean” factors, and will make interpretation of the factors much easier. This method works best when there are only a few significant cross-loadings. (Ho, 2006, p.221)

In this research, a cross-loaded variable means that a retail website feature appears to share the underlying dimensions of at least two types of retail website features, which is likely to happen in reality as the features may not be designed to fit the types in this research. Although the existence of cross-loaded variables makes the interpretation of factors difficult, they may add important value to this research, as a means of developing accurate descriptions of these factors. Therefore, it was decided to keep these cross-loaded variables in all the factors they correlate to. Reliability analysis (see section 11.2.4 on page 125) may suggest deleting the variables to improve the reliability of the factors. However, if the cross-loaded variables still exist after the reliability analysis, they will be discussed and assigned to one of the factors by comparing the outputs of the PCAs on different categories of data (see section 11.2.5 on page 127), in order to develop more accurate descriptions of factors.

### 11.2.4. Reliability Analysis

Field (2009) has suggested that if PCA is used to analyse questionnaire, the reliability

should be checked on each factor (or subscale) individually.

There are two commonly used tests of reliability: split-half reliability and Cronbach's alpha (α). However, the split-half reliability is criticized insofar as the outcome depends very much on how the sample is split. Cronbach's alpha has the ability to overcome this problem, so it is selected as a means of analysing the reliability of scales in this study. It is suggested that a value above .8 is appropriate for Cronbach's alpha, a value between .7 and .8 is acceptable, and any value below .7 indicates an unreliable scale (Kline, 1999, Field, 2009).

In the output of reliability analysis, there are two issues that need to be checked. One is the Corrected Item-Total Correlation (see Table 11.10 for example). If a factor is reliable, all variables associated with it should correlate with the total. If any of these values are less than .3, it means that this particular variable does not correlate very well with the factor overall, and will need to be dropped from the factor. The second issue is to compare the 'Cronbach's Alpha if Item Deleted' and the 'overall Cronbach's Alpha (i.e. overall α)' (see Table 11.10 for example). If the former value is greater than the latter, it means the deletion of that variable can improve the reliability of the factor. Therefore, the variables will be deleted if they can improve the reliability of factors.

### 11.2.5. Four Categories of Data

Both data from the student sample and customer sample in Study 3 were used for PCA. The questionnaire enquired as to the retail website features' influences on customer experience and repurchase intention. This has created a 2 by 2 matrix of the data structure, i.e. four data categories (Table 11.1). PCA was performed separately on these four data categories: students – customer experience (CE), students – repurchase intention (RI), customers – customer experience (CE), and customers – repurchase intention (RI).

| | **Customer Experience** | **Repurchase Intention** |
|---|---|---|
| **Student** | Student – CE | Student – RI |
| **Customers** | Customer – CE | Customers – RI |

**Table 11.1 Data Categories for Exploratory Factor Analysis**

## 11.3. Output of PCA and Reliability Analysis

This section presents and interprets the output of the PCA and reliability analysis, in order to allow reproduction of the analysis. The findings of PCA will be concluded in the next section (page 163).

### 11.3.1. Students – Customer Experience

The previous section explained the purpose of each PCA output table. This section presents and interprets the PCA output, based on the data collected from university students on their perceived influences of the retail website features on customer experience.

Table 11.2 presents the Correlation Matrix. All correlation coefficient values greater than .33 are highlighted. It shows that at least some variables are correlated, and confirms that PCA is appropriate for the analysis. Table 11.3 shows the result of KMO and Bartlett's test. The KMO value is 0.881, which is large for PCA. The Bartlett's test of sphericity shows a significance value of .000 which also confirms that PCA is appropriate.

**Correlation Matrix**

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Correlation | 1 | 1.000 | .602 | .319 | .363 | .350 | .348 | .390 | .404 | .254 | .232 | .375 | .295 | .250 | .225 | .078 | .359 | .309 | .081 | .082 | .122 |
| | 2 | .602 | 1.000 | .300 | .400 | .397 | .414 | .424 | .383 | .302 | .249 | .411 | .297 | .211 | .199 | .069 | .366 | .323 | .056 | .028 | .166 |
| | 3 | .319 | .300 | 1.000 | .323 | .320 | .321 | .390 | .368 | .359 | .379 | .390 | .295 | .311 | .215 | .214 | .418 | .380 | .276 | .258 | .295 |
| | 4 | .363 | .400 | .323 | 1.000 | .686 | .349 | .323 | .303 | .257 | .217 | .377 | .329 | .269 | .224 | .059 | .307 | .295 | .068 | .107 | .115 |
| | 5 | .350 | .397 | .320 | .686 | 1.000 | .319 | .307 | .287 | .255 | .153 | .374 | .340 | .328 | .212 | .118 | .302 | .324 | .024 | .069 | .138 |
| | 6 | .348 | .414 | .321 | .349 | .319 | 1.000 | .545 | .439 | .372 | .313 | .296 | .156 | .162 | .186 | .090 | .338 | .341 | .165 | .118 | .183 |
| | 7 | .390 | .424 | .390 | .323 | .307 | .545 | 1.000 | .576 | .419 | .350 | .338 | .247 | .186 | .221 | .092 | .396 | .373 | .174 | .140 | .218 |
| | 8 | .404 | .383 | .368 | .303 | .287 | .439 | .576 | 1.000 | .504 | .352 | .285 | .186 | .213 | .231 | .079 | .330 | .282 | .234 | .182 | .160 |
| | 9 | .254 | .302 | .359 | .257 | .255 | .372 | .419 | .504 | 1.000 | .347 | .326 | .232 | .237 | .188 | .142 | .361 | .317 | .266 | .252 | .242 |
| | 10 | .232 | .249 | .379 | .217 | .153 | .313 | .350 | .352 | .347 | 1.000 | .216 | .159 | .167 | .207 | .258 | .351 | .290 | .398 | .364 | .346 |
| | 11 | .375 | .411 | .390 | .377 | .374 | .296 | .338 | .285 | .326 | .216 | 1.000 | .643 | .505 | .334 | .056 | .443 | .364 | .046 | .057 | .134 |
| | 12 | .295 | .297 | .295 | .329 | .340 | .156 | .247 | .186 | .232 | .159 | .643 | 1.000 | .649 | .345 | .122 | .296 | .256 | .017 | .120 | .136 |
| | 13 | .250 | .211 | .311 | .269 | .328 | .162 | .186 | .213 | .237 | .167 | .505 | .649 | 1.000 | .363 | .154 | .221 | .226 | .065 | .146 | .148 |
| | 14 | .225 | .199 | .215 | .224 | .212 | .186 | .221 | .231 | .188 | .207 | .334 | .345 | .363 | 1.000 | .334 | .267 | .250 | .159 | .193 | .217 |
| | 15 | .078 | .069 | .214 | .059 | .118 | .090 | .092 | .079 | .142 | .258 | .056 | .122 | .154 | .334 | 1.000 | .169 | .203 | .421 | .449 | .498 |
| | 16 | .359 | .366 | .418 | .307 | .302 | .338 | .396 | .330 | .361 | .351 | .443 | .296 | .221 | .267 | .169 | 1.000 | .607 | .236 | .228 | .302 |
| | 17 | .309 | .323 | .380 | .295 | .324 | .341 | .373 | .282 | .317 | .290 | .364 | .256 | .226 | .250 | .203 | .607 | 1.000 | .289 | .247 | .347 |
| | 18 | .081 | .056 | .276 | .068 | .024 | .165 | .174 | .234 | .266 | .398 | .046 | .017 | .065 | .159 | .421 | .236 | .289 | 1.000 | .681 | .478 |
| | 19 | .082 | .028 | .258 | .107 | .069 | .118 | .140 | .182 | .252 | .364 | .057 | .120 | .146 | .193 | .449 | .228 | .247 | .681 | 1.000 | .464 |
| | 20 | .122 | .166 | .295 | .115 | .138 | .183 | .218 | .160 | .242 | .346 | .134 | .136 | .148 | .217 | .498 | .302 | .347 | .478 | .464 | 1.000 |
| Sig. (1-tailed) | 1 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .014 | .000 | .000 | .011 | .010 | .000 |
| | 2 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .027 | .000 | .000 | .057 | .217 | .000 |
| | 3 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 4 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .050 | .000 | .000 | .029 | .001 | .001 |
| | 5 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .249 | .026 | .000 |
| | 6 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .006 | .000 | .000 | .000 | .000 | .000 |
| | 7 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .005 | .000 | .000 | .000 | .000 | .000 |
| | 8 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .013 | .000 | .000 | .000 | .000 | .000 |
| | 9 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 10 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 11 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .057 | .000 | .000 | .099 | .056 | .000 |
| | 12 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .314 | .000 | .000 |
| | 13 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .035 | .000 | .000 |
| | 14 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 |
| | 15 | .014 | .027 | .000 | .050 | .000 | .006 | .005 | .013 | .000 | .000 | .057 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 |
| | 16 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 |
| | 17 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 |
| | 18 | .011 | .057 | .000 | .029 | .249 | .000 | .000 | .000 | .000 | .000 | .099 | .314 | .035 | .000 | .000 | .000 | .000 | | .000 | .000 |
| | 19 | .010 | .217 | .000 | .001 | .026 | .000 | .000 | .000 | .000 | .000 | .056 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 |
| | 20 | .000 | .000 | .000 | .001 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | |

**Table 11.2 Students – CE: Correlation Matrix**

**KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .881 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 6309.535 |
| | df | 190 |
| | Sig. | .000 |

**Table 11.3 Students – CE: KMO and Bartlett's Test**

The communalities table (Table 11.4) presents the communality of each variable. As shown in Table 11.5, 20 factors were computed, however, only the 4 factors with eigenvalue of 1 or greater were retained. These four factors account for 31.98%, 12.17%, 8.212% and 5.296% of the total variance, respectively. This is almost 58% of the total variance that is attributed to these three factors. The remaining 16 factors account for only 42% of the variance. Thus, a model with 4 factors may be adequate to represent the data. The loadings of each variable onto each factor before rotation are presented in Table 11.6.

**Communalities**

| | Initial | Extraction |
|---|---|---|
| 1. keyword CE | 1.000 | .467 |
| 2. category CE | 1.000 | .542 |
| 3. interactive CE | 1.000 | .424 |
| 4. suggest alternative CE | 1.000 | .713 |
| 5. suggest additional CE | 1.000 | .745 |
| 6. highlight offer CE | 1.000 | .523 |
| 7. filter CE | 1.000 | .627 |
| 8. sort CE | 1.000 | .614 |
| 9. show number CE | 1.000 | .505 |
| 10. compare CE | 1.000 | .458 |
| 11. save address CE | 1.000 | .684 |
| 12. save payment CE | 1.000 | .769 |
| 13. express checkout CE | 1.000 | .704 |
| 14. 3rd party checkout CE | 1.000 | .382 |
| 15. pay offline CE | 1.000 | .582 |
| 16. FAQs CE | 1.000 | .450 |
| 17. email/form CE | 1.000 | .424 |
| 18. live chat CE | 1.000 | .686 |
| 19. forum CE | 1.000 | .658 |
| 20. ask offline CE | 1.000 | .574 |

Extraction Method: Principal Component Analysis.

**Table 11.4 Students – CE: Communalities**

**Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings[a] |
|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total |
| 1 | 6.396 | 31.980 | 31.980 | 6.396 | 31.980 | 31.980 | 4.774 |
| 2 | 2.434 | 12.170 | 44.150 | 2.434 | 12.170 | 44.150 | 3.444 |
| 3 | 1.642 | 8.212 | 52.362 | 1.642 | 8.212 | 52.362 | 3.857 |
| 4 | 1.059 | 5.296 | 57.658 | 1.059 | 5.296 | 57.658 | 3.694 |
| 5 | .956 | 4.778 | 62.436 | | | | |
| 6 | .889 | 4.443 | 66.879 | | | | |
| 7 | .776 | 3.882 | 70.761 | | | | |
| 8 | .657 | 3.286 | 74.048 | | | | |
| 9 | .645 | 3.227 | 77.274 | | | | |
| 10 | .607 | 3.034 | 80.308 | | | | |
| 11 | .581 | 2.906 | 83.214 | | | | |
| 12 | .497 | 2.485 | 85.698 | | | | |
| 13 | .463 | 2.316 | 88.014 | | | | |
| 14 | .441 | 2.205 | 90.220 | | | | |
| 15 | .379 | 1.897 | 92.117 | | | | |
| 16 | .370 | 1.850 | 93.966 | | | | |
| 17 | .352 | 1.758 | 95.724 | | | | |
| 18 | .302 | 1.512 | 97.236 | | | | |
| 19 | .288 | 1.442 | 98.678 | | | | |
| 20 | .264 | 1.322 | 100.000 | | | | |

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

**Table 11.5 Students – CE: Total Variance Explained**

**Component Matrix[a]**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 16. FAQs CE | .668 | | | |
| 7. filter CE | .659 | | -.382 | |
| 11. save address CE | .645 | -.347 | | |
| 3. interactive CE | .644 | | | |
| 17. email/form CE | .636 | | | |
| 8. sort CE | .625 | | -.386 | |
| 2. category CE | .614 | | | |
| 9. show number CE | .599 | | | |
| 1. keyword CE | .596 | | | |
| 6. highlight offer CE | .595 | | -.396 | |
| 4. suggest alternative CE | .585 | | | .521 |
| 5. suggest additional CE | .578 | -.331 | | .545 |
| 10. compare CE | .553 | | | |
| 14. 3rd party checkout CE | .476 | | .384 | |
| 18. live chat CE | .406 | .721 | | |
| 19. forum CE | .406 | .690 | | |
| 15. pay offline CE | .350 | .577 | | |
| 20. ask offline CE | .467 | .566 | | |
| 13. express checkout CE | .513 | | .586 | |
| 12. save payment CE | .551 | | .579 | |

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

**Table 11.6 Students – CE: Component Matrix**

Table 11.7 presents the four factors after Oblique rotation. As discussed in Section 11.2.2 (page 119), both Pattern Matrix (Table 11.7) and Structure Matrix (Table 11.8) are reported. However, only the Pattern Matrix is interpreted. It shows that three variables (1. keyword, 2. category, and 10. compare) are cross-loaded on two factors and one variable (17. email/form) is not significantly associated to any factor. Table 11.9 presents the correlation coefficients between the four factors. It suggests all the factors are correlated to some degree, except for the small (?) correlation between factor 2 and factor 4. Thus, it confirms that the factors are not independent of each other, which means Oblique rotation is appropriate.

**Pattern Matrix**[a]

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 8. sort CE | .800 | | | |
| 7. filter CE | .768 | | | |
| 9. show number CE | .671 | | | |
| 6. highlight offer CE | .642 | | | |
| 10. compare CE | .485 | .382 | | |
| 16. FAQs CE | .396 | | | |
| 3. interactive CE | .379 | | | |
| 19. forum CE | | .802 | | |
| 18. live chat CE | | .790 | | |
| 15. pay offline CE | | .763 | | |
| 20. ask offline CE | | .734 | | |
| 17. email/form CE | | | | |
| 12. save payment CE | | | .892 | |
| 13. express checkout CE | | | .874 | |
| 11. save address CE | | | .712 | |
| 14. 3rd party checkout CE | | | .526 | |
| 5. suggest additional CE | | | | .861 |
| 4. suggest alternative CE | | | | .838 |
| 2. category CE | .402 | | | .478 |
| 1. keyword CE | .381 | | | .404 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 8 iterations.

**Table 11.7 Students – CE: Pattern Matrix**

**Structure Matrix**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 7. filter CE | .788 | | | .377 |
| 8. sort CE | .782 | | | |
| 6. highlight offer CE | .693 | | | .440 |
| 9. show number CE | .685 | | | |
| 16. FAQs CE | .578 | .353 | .415 | .433 |
| 10. compare CE | .561 | .508 | | |
| 3. interactive CE | .550 | .375 | .432 | .363 |
| 17. email/form CE | .504 | .412 | .361 | .453 |
| 19. forum CE | | .808 | | |
| 18. live chat CE | | .803 | | |
| 20. ask offline CE | | .750 | | |
| 15. pay offline CE | | .736 | | |
| 12. save payment CE | | | .871 | .351 |
| 13. express checkout CE | | | .835 | |
| 11. save address CE | .438 | | .784 | .445 |
| 14. 3rd party checkout CE | | .338 | .580 | |
| 5. suggest additional CE | | | .387 | .858 |
| 4. suggest alternative CE | .334 | | .351 | .843 |
| 2. category CE | .573 | | | .641 |
| 1. keyword CE | .546 | | .347 | .581 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

**Table 11.8 Students – CE: Structure Matrix**

**Component Correlation Matrix**

| Component | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | 1.000 | .266 | .321 | .397 |
| 2 | .266 | 1.000 | .224 | .087 |
| 3 | .321 | .224 | 1.000 | .388 |
| 4 | .397 | .087 | .388 | 1.000 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

**Table 11.9 Students – CE: Component Correlation Matrix**

The results of the reliability analysis on the four factors are presented in Table 11.10. All factors appear to have high reliabilities, all Cronbach's alpha are above .76. However, it shows the deletion of variable 10. compare and variable 14. 3rd party checkout may improve the reliability of their associated factors. Thus, these two variables are deleted, which brings all Cronbach's alpha to above .79.

| | Variable | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|---|---|
| **Factor 1 overall α=.827 N=9** | 1. keyword CE | 21.94 | 114.017 | .505 | .813 |
| | 2. category CE | 21.89 | 112.117 | .567 | .807 |
| | 3. interactive CE | 22.66 | 109.320 | .509 | .812 |
| | 6. highlight offer CE | 22.44 | 109.298 | .534 | .809 |
| | 7. filter CE | 22.29 | 105.505 | .634 | .797 |
| | 8. sort CE | 21.94 | 106.094 | .616 | .799 |
| | 9. show number CE | 22.59 | 106.479 | .530 | .810 |
| | 10. compare CE | 23.27 | 109.847 | .417 | .825 |
| | 16. FAQs CE | 22.59 | 109.411 | .506 | .812 |
| **Factor 2 overall α=.792 N=5** | ~~10. compare CE~~ | ~~3.81~~ | ~~60.335~~ | ~~.427~~ | ~~.796~~ |
| | 15. pay offline CE | 5.25 | 56.063 | .525 | .768 |
| | 18. live chat CE | 4.69 | 48.247 | .675 | .717 |
| | 19. forum CE | 4.88 | 53.179 | .649 | .729 |
| | 20. ask offline CE | 4.38 | 55.382 | .593 | .747 |
| **Factor 3 overall α=.768 N=4** | 11. save address CE | 5.89 | 38.102 | .606 | .698 |
| | 12. save payment CE | 6.39 | 31.733 | .697 | .638 |
| | 13. express checkout CE | 6.55 | 33.900 | .610 | .689 |
| | ~~14. 3rd party checkout CE~~ | ~~7.06~~ | ~~40.129~~ | ~~.388~~ | ~~.805~~ |
| **Factor 4 overall α=.812** | 4. suggest alternative CE | 2.15 | 4.958 | .684 | NA |
| | 5. suggest additional CE | 2.34 | 4.769 | .684 | NA |

**Table 11.10 Students – CE: Reliability Analysis**

### 11.3.2. Students – Repurchase Intention

This section presents and interprets the PCA output based on the data collected from university students on their perceived influences of the retail website features on repurchase intention.

Table 11.11 presents the Correlation Matrix. All correlation coefficient values of greater than .33 are highlighted. This shows that at least some variables are correlated, and confirms that PCA is appropriate for analysis. Table 11.12 shows the result of KMO and Bartlett's test. The KMO value is 0.894, which is large (?) for PCA. The Bartlett's test of sphericity shows a significance value of .000, which also confirms that PCA is appropriate.

**Correlation Matrix**

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Correlation | 1 | 1.000 | .660 | .355 | .387 | .372 | .350 | .405 | .415 | .306 | .272 | .417 | .349 | .278 | .280 | .078 | .367 | .370 | .117 | .123 | .125 |
| | 2 | .660 | 1.000 | .384 | .415 | .397 | .378 | .474 | .413 | .353 | .270 | .437 | .347 | .282 | .258 | .112 | .404 | .396 | .168 | .131 | .211 |
| | 3 | .355 | .384 | 1.000 | .344 | .348 | .336 | .436 | .410 | .423 | .390 | .394 | .245 | .315 | .266 | .267 | .475 | .441 | .336 | .275 | .367 |
| | 4 | .387 | .415 | .344 | 1.000 | .737 | .322 | .344 | .313 | .295 | .244 | .330 | .304 | .286 | .288 | .179 | .314 | .332 | .119 | .183 | .208 |
| | 5 | .372 | .397 | .348 | .737 | 1.000 | .303 | .345 | .295 | .303 | .240 | .343 | .352 | .314 | .288 | .212 | .353 | .362 | .129 | .196 | .208 |
| | 6 | .350 | .378 | .336 | .322 | .303 | 1.000 | .556 | .446 | .344 | .310 | .276 | .189 | .239 | .262 | .157 | .360 | .354 | .257 | .192 | .268 |
| | 7 | .405 | .474 | .436 | .344 | .345 | .556 | 1.000 | .564 | .421 | .367 | .371 | .247 | .245 | .312 | .175 | .410 | .414 | .268 | .207 | .278 |
| | 8 | .415 | .413 | .410 | .313 | .295 | .446 | .564 | 1.000 | .515 | .387 | .328 | .229 | .248 | .262 | .123 | .388 | .330 | .266 | .256 | .222 |
| | 9 | .306 | .353 | .423 | .295 | .303 | .344 | .421 | .515 | 1.000 | .336 | .342 | .269 | .305 | .291 | .205 | .419 | .353 | .297 | .275 | .340 |
| | 10 | .272 | .270 | .390 | .244 | .240 | .310 | .367 | .387 | .336 | 1.000 | .251 | .202 | .201 | .263 | .287 | .404 | .340 | .410 | .379 | .370 |
| | 11 | .417 | .437 | .394 | .330 | .343 | .276 | .371 | .328 | .342 | .251 | 1.000 | .658 | .529 | .398 | .106 | .448 | .391 | .138 | .133 | .160 |
| | 12 | .349 | .347 | .245 | .304 | .352 | .189 | .247 | .229 | .269 | .202 | .658 | 1.000 | .661 | .427 | .171 | .267 | .284 | .104 | .151 | .146 |
| | 13 | .278 | .282 | .315 | .286 | .314 | .239 | .245 | .248 | .305 | .201 | .529 | .661 | 1.000 | .422 | .214 | .259 | .280 | .145 | .214 | .229 |
| | 14 | .280 | .258 | .266 | .288 | .288 | .262 | .312 | .262 | .291 | .263 | .398 | .427 | .422 | 1.000 | .355 | .318 | .297 | .170 | .238 | .252 |
| | 15 | .078 | .112 | .267 | .179 | .212 | .157 | .175 | .123 | .205 | .287 | .106 | .171 | .214 | .355 | 1.000 | .171 | .273 | .387 | .449 | .530 |
| | 16 | .367 | .404 | .475 | .314 | .353 | .360 | .410 | .388 | .419 | .404 | .448 | .267 | .259 | .318 | .171 | 1.000 | .643 | .344 | .269 | .325 |
| | 17 | .370 | .396 | .441 | .332 | .362 | .354 | .414 | .330 | .353 | .340 | .391 | .284 | .280 | .297 | .273 | .643 | 1.000 | .402 | .317 | .414 |
| | 18 | .117 | .168 | .336 | .119 | .129 | .257 | .268 | .266 | .297 | .410 | .138 | .104 | .145 | .170 | .387 | .344 | .402 | 1.000 | .668 | .557 |
| | 19 | .123 | .131 | .275 | .183 | .196 | .192 | .207 | .256 | .275 | .379 | .133 | .151 | .214 | .238 | .449 | .269 | .317 | .668 | 1.000 | .536 |
| | 20 | .125 | .211 | .367 | .208 | .208 | .268 | .278 | .222 | .340 | .370 | .160 | .146 | .229 | .252 | .530 | .325 | .414 | .557 | .536 | 1.000 |
| Sig. (1-tailed) | 1 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .014 | .000 | .000 | .000 | .000 | .000 |
| | 2 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .001 | .000 | .000 | .000 | .000 | .000 |
| | 3 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 4 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 5 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 6 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 7 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 8 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 9 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 10 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 11 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .001 | .000 | .000 | .000 | .000 | .000 |
| | 12 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .002 | .000 | .000 |
| | 13 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 14 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 |
| | 15 | .014 | .001 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .001 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 |
| | 16 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 |
| | 17 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 |
| | 18 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .002 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 |
| | 19 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 |
| | 20 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | |

**Table 11.11 Students – RI: Correlation Matrix**

**KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .894 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 7056.520 |
| | df | 190 |
| | Sig. | .000 |

**Table 11.12 Students – RI: KMO and Bartlett's Test**

The communalities table (Table 11.13) presents the communality of each variable. As shown in Table 11.14, 20 factors were computed, however, only the 4 factors with eigenvalue of 1 or greater were retained. These four factors account for 35.55%, 10.957%, 7.668% and 5.64% of the total variance respectively. This is almost 60% of the total variance attributed to these three factors. The remaining 16 factors account for only 40% of the variance. Thus, a model with 4 factors may be adequate to represent the data. The loadings of each variable onto each factor before rotation are presented in Table 11.15.

**Communalities**

| | Initial | Extraction |
|---|---|---|
| 1. keyword RI | 1.000 | .539 |
| 2. category RI | 1.000 | .570 |
| 3. interactive RI | 1.000 | .464 |
| 4. suggest alternative RI | 1.000 | .830 |
| 5. suggest additional RI | 1.000 | .824 |
| 6. highlight offer RI | 1.000 | .458 |
| 7. filter RI | 1.000 | .598 |
| 8. sort RI | 1.000 | .580 |
| 9. show number RI | 1.000 | .447 |
| 10. compare RI | 1.000 | .431 |
| 11. save address RI | 1.000 | .704 |
| 12. save payment RI | 1.000 | .789 |
| 13. express checkout RI | 1.000 | .699 |
| 14. 3rd party checkout RI | 1.000 | .458 |
| 15. pay offline RI | 1.000 | .591 |
| 16. FAQs RI | 1.000 | .507 |
| 17. email/form RI | 1.000 | .483 |
| 18. live chat RI | 1.000 | .683 |
| 19. forum RI | 1.000 | .653 |
| 20. ask offline RI | 1.000 | .653 |

Extraction Method: Principal Component Analysis.

**Table 11.13 Students – RI: Communalities**

**Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings[a] |
|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total |
| 1 | 7.110 | 35.550 | 35.550 | 7.110 | 35.550 | 35.550 | 5.764 |
| 2 | 2.191 | 10.957 | 46.508 | 2.191 | 10.957 | 46.508 | 3.605 |
| 3 | 1.534 | 7.668 | 54.176 | 1.534 | 7.668 | 54.176 | 4.234 |
| 4 | 1.128 | 5.640 | 59.816 | 1.128 | 5.640 | 59.816 | 3.357 |
| 5 | .922 | 4.608 | 64.424 | | | | |
| 6 | .789 | 3.947 | 68.371 | | | | |
| 7 | .759 | 3.795 | 72.166 | | | | |
| 8 | .682 | 3.408 | 75.574 | | | | |
| 9 | .665 | 3.324 | 78.899 | | | | |
| 10 | .607 | 3.033 | 81.932 | | | | |
| 11 | .510 | 2.549 | 84.480 | | | | |
| 12 | .464 | 2.321 | 86.801 | | | | |
| 13 | .431 | 2.155 | 88.956 | | | | |
| 14 | .401 | 2.006 | 90.962 | | | | |
| 15 | .365 | 1.823 | 92.785 | | | | |
| 16 | .333 | 1.665 | 94.450 | | | | |
| 17 | .313 | 1.566 | 96.016 | | | | |
| 18 | .285 | 1.426 | 97.442 | | | | |
| 19 | .269 | 1.347 | 98.790 | | | | |
| 20 | .242 | 1.210 | 100.000 | | | | |

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

**Table 11.14 Students – RI: Total Variance Explained**

**Component Matrix[a]**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 16. FAQs RI | .684 | | | |
| 17. email/form RI | .683 | | | |
| 7. filter RI | .675 | | -.346 | |
| 3. interactive RI | .667 | | | |
| 2. category RI | .646 | | | |
| 11. save address RI | .638 | -.378 | | |
| 8. sort RI | .636 | | -.358 | |
| 9. show number RI | .629 | | | |
| 1. keyword RI | .605 | -.367 | | |
| 6. highlight offer RI | .587 | | | |
| 10. compare RI | .578 | | | |
| 14. 3rd party checkout RI | .550 | | .387 | |
| 18. live chat RI | .508 | .648 | | |
| 19. forum RI | .494 | .618 | | |
| 20. ask offline RI | .548 | .578 | | |
| 15. pay offline RI | .426 | .502 | .330 | |
| 12. save payment RI | .552 | -.366 | .567 | |
| 13. express checkout RI | .555 | | .555 | |
| 4. suggest alternative RI | .589 | | | .645 |
| 5. suggest additional RI | .602 | | | .632 |

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

**Table 11.15 Students – RI: Component Matrix**

Table 11.16 presents the four factors after Oblique rotation. As discussed in Section 11.2.2 (page 119), both Pattern Matrix (Table 11.16) and Structure Matrix (Table 11.17) are reported. However, only the Pattern Matrix is interpreted. This shows that there is only one cross-loaded variable, i.e. 10. compare. Table 11.18 presents the correlation coefficients between the four factors. It suggests that all the factors are correlated to some degree, except for the little correlation between factor 2 and factor 4. Thus, it confirms that the factors are not independent from each other, which means Oblique rotation is appropriate.

**Pattern Matrix**[a]

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 8. sort RI | .793 | | | |
| 7. filter RI | .767 | | | |
| 6. highlight offer RI | .663 | | | |
| 16. FAQs RI | .592 | | | |
| 2. category RI | .586 | | | |
| 9. show number RI | .571 | | | |
| 1. keyword RI | .555 | | | |
| 3. interactive RI | .509 | | | |
| 17. email/form RI | .459 | | | |
| 10. compare RI | .459 | .366 | | |
| 19. forum RI | | .784 | | |
| 20. ask offline RI | | .753 | | |
| 18. live chat RI | | .743 | | |
| 15. pay offline RI | | .736 | | |
| 12. save payment RI | | | .915 | |
| 13. express checkout RI | | | .854 | |
| 11. save address RI | | | .741 | |
| 14. 3rd party checkout RI | | | .574 | |
| 4. suggest alternative RI | | | | .889 |
| 5. suggest additional RI | | | | .873 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 6 iterations.

**Table 11.16 Students – RI: Pattern Matrix**

**Structure Matrix**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 7. filter RI | .772 | | | .331 |
| 8. sort RI | .759 | | | |
| 16. FAQs RI | .688 | .344 | .396 | |
| 2. category RI | .678 | | .415 | .510 |
| 6. highlight offer RI | .671 | | | |
| 9. show number RI | .643 | | .371 | |
| 1. keyword RI | .639 | | .421 | .487 |
| 3. interactive RI | .639 | .381 | .375 | .339 |
| 17. email/form RI | .623 | .439 | .390 | .357 |
| 10. compare RI | .554 | .499 | | |
| 19. forum RI | | .805 | | |
| 20. ask offline RI | .364 | .795 | | |
| 18. live chat RI | .409 | .792 | | |
| 15. pay offline RI | | .725 | | |
| 12. save payment RI | | | .883 | .342 |
| 13. express checkout RI | | | .833 | |
| 11. save address RI | .510 | | .801 | |
| 14. 3rd party checkout RI | | | .645 | |
| 4. suggest alternative RI | .410 | | .350 | .907 |
| 5. suggest additional RI | .399 | | .391 | .903 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

**Table 11.17 Students – RI: Structure Matrix**

**Component Correlation Matrix**

| Component | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | 1.000 | .298 | .405 | .381 |
| 2 | .298 | 1.000 | .208 | .121 |
| 3 | .405 | .208 | 1.000 | .392 |
| 4 | .381 | .121 | .392 | 1.000 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

**Table 11.18 Students – RI: Component Correlation Matrix**

The results of the reliability analysis on the four factors are presented in Table 11.19. All factors appear to have high reliability, and all Cronbach's alpha are above .79. However, this shows the deletion of variable 10. compare from factor 2 and variable 14. 3rd party checkout from factor 3 may improve the reliability of their associated factors. Thus, these two variables are deleted, which brings all Cronbach's alpha to above .80.

| | Variable | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|---|---|
| **Factor 1 overall α=.860 N=10** | 1. keyword RI | 22.92 | 147.783 | .551 | .849 |
| | 2. category RI | 22.87 | 146.114 | .607 | .845 |
| | 3. interactive RI | 23.63 | 142.465 | .569 | .847 |
| | 6. highlight offer RI | 23.36 | 146.460 | .518 | .851 |
| | 7. filter RI | 23.33 | 140.377 | .646 | .841 |
| | 8. sort RI | 23.02 | 141.276 | .617 | .843 |
| | 9. show number RI | 23.73 | 141.174 | .569 | .847 |
| | 10. compare RI | 24.12 | 147.355 | .439 | .859 |
| | 16. FAQs RI | 23.60 | 140.827 | .601 | .845 |
| | 17. email/form RI | 23.66 | 141.234 | .595 | .845 |
| **Factor 2 overall α=.801 N=5** | ~~10. compare RI~~ | ~~4.60~~ | ~~53.402~~ | ~~.431~~ | ~~.806~~ |
| | 15. pay offline RI | 5.78 | 49.441 | .517 | .784 |
| | 18. live chat RI | 5.13 | 43.983 | .658 | .738 |
| | 19. forum RI | 5.50 | 46.528 | .669 | .736 |
| | 20. ask offline RI | 5.14 | 46.610 | .653 | .741 |
| **Factor 3 overall α=.796 N=4** | 11. save address RI | 5.65 | 37.062 | .630 | .737 |
| | 12. save payment RI | 6.06 | 31.457 | .729 | .679 |
| | 13. express checkout RI | 6.31 | 33.474 | .631 | .733 |
| | ~~14. 3rd party checkout RI~~ | ~~6.75~~ | ~~39.140~~ | ~~.455~~ | ~~.816~~ |
| **Factor 4 overall α=.839 N=2** | 4. suggest alternative RI | 1.95 | 4.628 | .723 | - |
| | 5. suggest additional RI | 2.12 | 4.491 | .723 | - |

**Table 11.19 Students – RI: Reliability Analysis**

### 11.3.3. Customers – Customer Experience

This section presents and interprets the PCA output, based on the data collected from customers of a retail website on their perceived influences of the retail website features on customer experience.

Table 11.20 presents the Correlation Matrix. All correlation coefficient values greater than .33 are highlighted. It shows that at least some variables are correlated, and confirms that PCA is appropriate for the analysis. Table 11.21 shows the result of KMO and Bartlett's test. The KMO value is 0.891 which is great for PCA. The Bartlett's test of sphericity shows a significance value of .000, which also confirms that PCA is appropriate.

**Correlation Matrix**

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Correlation | 1 | 1.000 | .788 | .385 | .465 | .490 | .519 | .563 | .588 | .457 | .451 | .455 | .511 | .349 | .369 | .253 | .482 | .449 | .166 | .164 | .198 |
| | 2 | .788 | 1.000 | .452 | .521 | .508 | .597 | .599 | .573 | .494 | .555 | .407 | .461 | .367 | .344 | .310 | .496 | .488 | .169 | .133 | .232 |
| | 3 | .385 | .452 | 1.000 | .599 | .493 | .487 | .496 | .509 | .519 | .580 | .550 | .530 | .521 | .419 | .423 | .596 | .539 | .462 | .498 | .416 |
| | 4 | .465 | .521 | .599 | 1.000 | .803 | .325 | .493 | .426 | .386 | .510 | .521 | .514 | .435 | .344 | .283 | .538 | .539 | .387 | .350 | .230 |
| | 5 | .490 | .508 | .493 | .803 | 1.000 | .438 | .579 | .497 | .490 | .508 | .489 | .498 | .433 | .388 | .307 | .510 | .481 | .280 | .252 | .247 |
| | 6 | .519 | .597 | .487 | .325 | .438 | 1.000 | .639 | .602 | .589 | .597 | .417 | .448 | .512 | .371 | .356 | .431 | .437 | .313 | .357 | .405 |
| | 7 | .563 | .599 | .496 | .493 | .579 | .639 | 1.000 | .762 | .718 | .535 | .468 | .450 | .455 | .436 | .309 | .507 | .465 | .270 | .259 | .291 |
| | 8 | .588 | .573 | .509 | .426 | .497 | .602 | .762 | 1.000 | .704 | .555 | .622 | .510 | .449 | .411 | .294 | .579 | .572 | .217 | .218 | .291 |
| | 9 | .457 | .494 | .519 | .386 | .490 | .589 | .718 | .704 | 1.000 | .588 | .500 | .519 | .511 | .495 | .328 | .432 | .473 | .335 | .297 | .308 |
| | 10 | .451 | .555 | .580 | .510 | .508 | .597 | .535 | .555 | .588 | 1.000 | .523 | .514 | .576 | .459 | .480 | .492 | .513 | .447 | .443 | .461 |
| | 11 | .455 | .407 | .550 | .521 | .489 | .417 | .468 | .622 | .500 | .523 | 1.000 | .796 | .645 | .359 | .221 | .486 | .472 | .243 | .212 | .179 |
| | 12 | .511 | .461 | .530 | .514 | .498 | .448 | .450 | .510 | .519 | .514 | .796 | 1.000 | .770 | .398 | .200 | .487 | .486 | .259 | .278 | .207 |
| | 13 | .349 | .367 | .521 | .435 | .433 | .512 | .455 | .449 | .511 | .576 | .645 | .770 | 1.000 | .471 | .257 | .406 | .435 | .371 | .374 | .258 |
| | 14 | .369 | .344 | .419 | .344 | .388 | .371 | .436 | .411 | .495 | .459 | .359 | .398 | .471 | 1.000 | .416 | .525 | .372 | .378 | .410 | .387 |
| | 15 | .253 | .310 | .423 | .283 | .307 | .356 | .309 | .294 | .328 | .480 | .221 | .200 | .257 | .416 | 1.000 | .413 | .412 | .626 | .622 | .709 |
| | 16 | .482 | .496 | .596 | .538 | .510 | .431 | .507 | .579 | .432 | .492 | .486 | .487 | .406 | .525 | .413 | 1.000 | .654 | .362 | .451 | .407 |
| | 17 | .449 | .488 | .539 | .539 | .481 | .437 | .465 | .572 | .473 | .513 | .472 | .486 | .435 | .372 | .412 | .654 | 1.000 | .369 | .361 | .431 |
| | 18 | .166 | .169 | .462 | .387 | .280 | .313 | .270 | .217 | .335 | .447 | .243 | .259 | .371 | .378 | .626 | .362 | .369 | 1.000 | .863 | .627 |
| | 19 | .164 | .133 | .498 | .350 | .252 | .357 | .259 | .218 | .297 | .443 | .212 | .278 | .374 | .410 | .622 | .451 | .361 | .863 | 1.000 | .633 |
| | 20 | .198 | .232 | .416 | .230 | .247 | .405 | .291 | .291 | .308 | .461 | .179 | .207 | .258 | .387 | .709 | .407 | .431 | .627 | .633 | 1.000 |
| Sig. (1-tailed) | 1 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .002 | .000 | .000 | .028 | .029 | .011 |
| | 2 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .026 | .063 | .004 |
| | 3 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 4 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .004 |
| | 5 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .001 | .002 | .002 |
| | 6 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 7 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .001 | .001 | .000 |
| | 8 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .006 | .006 | .000 |
| | 9 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 10 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 11 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .005 | .000 | .000 | .002 | .007 | .019 |
| | 12 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .010 | .000 | .000 | .001 | .001 | .008 |
| | 13 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .001 | .000 | .000 | .000 | .000 | .001 |
| | 14 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 |
| | 15 | .002 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .005 | .010 | .001 | .000 | | .000 | .000 | .000 | .000 | .000 |
| | 16 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 |
| | 17 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 |
| | 18 | .028 | .026 | .000 | .000 | .001 | .000 | .001 | .006 | .000 | .000 | .002 | .001 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 |
| | 19 | .029 | .063 | .000 | .000 | .002 | .000 | .001 | .006 | .000 | .000 | .007 | .001 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 |
| | 20 | .011 | .004 | .000 | .004 | .002 | .000 | .000 | .000 | .000 | .000 | .019 | .008 | .001 | .000 | .000 | .000 | .000 | .000 | .000 | |

**Table 11.20 Customers – CE: Correlation Matrix**

**KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .891 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2022.638 |
| | Df | 190 |
| | Sig. | .000 |

**Table 11.21 Customers – CE: KMO and Bartlett's Test**

The communalities table (Table 11.22) presents the communality of each variable. As shown in Table 11.23, 20 factors were computed; however, only the 4 factors with eigenvalue of 1 or greater were retained. These four factors account for 48%, 11.815%, 6.267% and 5.296% of the total variance respectively. That is, 71.384% of the total variance that is attributed to these three factors. The remaining 16 factors account for only 28.616% of the variance. Thus, a model with 4 factors may be adequate to represent the data. The loadings of each variable onto each factor before rotation are presented in Table 11.24.

**Communalities**

| | Initial | Extraction |
|---|---|---|
| 1. keyword CE | 1.000 | .678 |
| 2. category CE | 1.000 | .756 |
| 3. interactive CE | 1.000 | .627 |
| 4. suggest alternative CE | 1.000 | .865 |
| 5. suggest additional CE | 1.000 | .720 |
| 6. highlight offer CE | 1.000 | .694 |
| 7. filter CE | 1.000 | .734 |
| 8. sort CE | 1.000 | .748 |
| 9. show number CE | 1.000 | .704 |
| 10. compare CE | 1.000 | .632 |
| 11. save address CE | 1.000 | .776 |
| 12. save payment CE | 1.000 | .832 |
| 13. express checkout CE | 1.000 | .812 |
| 14. 3rd party checkout CE | 1.000 | .435 |
| 15. pay offline CE | 1.000 | .719 |
| 16. FAQs CE | 1.000 | .615 |
| 17. email/form CE | 1.000 | .569 |
| 18. live chat CE | 1.000 | .796 |
| 19. forum CE | 1.000 | .825 |
| 20. ask offline CE | 1.000 | .738 |

Extraction Method: Principal Component Analysis.

**Table 11.22 Customers – CE: Communalities**

**Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings[a] |
|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total |
| 1 | 9.601 | 48.006 | 48.006 | 9.601 | 48.006 | 48.006 | 7.019 |
| 2 | 2.363 | 11.815 | 59.821 | 2.363 | 11.815 | 59.821 | 5.400 |
| 3 | 1.253 | 6.267 | 66.088 | 1.253 | 6.267 | 66.088 | 5.760 |
| 4 | 1.059 | 5.296 | 71.384 | 1.059 | 5.296 | 71.384 | 5.165 |
| 5 | .734 | 3.672 | 75.056 | | | | |
| 6 | .723 | 3.613 | 78.670 | | | | |
| 7 | .668 | 3.341 | 82.011 | | | | |
| 8 | .511 | 2.555 | 84.566 | | | | |
| 9 | .479 | 2.395 | 86.961 | | | | |
| 10 | .427 | 2.136 | 89.098 | | | | |
| 11 | .390 | 1.948 | 91.046 | | | | |
| 12 | .334 | 1.672 | 92.718 | | | | |
| 13 | .278 | 1.388 | 94.105 | | | | |
| 14 | .251 | 1.255 | 95.360 | | | | |
| 15 | .245 | 1.225 | 96.584 | | | | |
| 16 | .188 | .942 | 97.526 | | | | |
| 17 | .162 | .810 | 98.336 | | | | |
| 18 | .129 | .645 | 98.981 | | | | |
| 19 | .114 | .568 | 99.549 | | | | |
| 20 | .090 | .451 | 100.000 | | | | |

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

**Table 11.23 Customers – CE: Total Variance Explained**

**Component Matrix[a]**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 10. compare CE | .784 | | | |
| 8. sort CE | .767 | | | |
| 3. interactive CE | .761 | | | |
| 7. filter CE | .758 | | | |
| 16. FAQs CE | .745 | | | |
| 9. show number CE | .744 | | | |
| 17. email/form CE | .723 | | | |
| 12. save payment CE | .723 | | -.464 | |
| 6. highlight offer CE | .718 | | | |
| 5. suggest additional CE | .710 | | | .416 |
| 4. suggest alternative CE | .706 | | | .553 |
| 11. save address CE | .706 | | -.424 | |
| 13. express checkout CE | .700 | | -.456 | |
| 2. category CE | .699 | | .368 | |
| 1. keyword CE | .669 | -.348 | | |
| 14. 3rd party checkout CE | .626 | | | |
| 19. forum CE | .563 | .704 | | |
| 18. live chat CE | .561 | .685 | | |
| 20. ask offline CE | .546 | .631 | | |
| 15. pay offline CE | .569 | .592 | | |

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

**Table 11.24 Customers – CE: Component Matrix**

Table 11.25 presents the four factors after Oblique rotation. As discussed in Section 11.2.2 (page 119), both Pattern Matrix (Table 11.25) and Structure Matrix (Table 11.26) are reported. However, only the Pattern Matrix is interpreted. It shows three cross-loaded variables. i.e. 1. keyword, 2. category, and 3. interactive. Table 11.27 presents the correlation coefficients between the four factors. This suggests that all the factors are correlated to some degree. Thus, it confirms that the factors are not independent from each other, which means Oblique rotation is appropriate.

**Pattern Matrix**[a]

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 7. filter CE | .774 | | | |
| 6. highlight offer CE | .755 | | | |
| 8. sort CE | .750 | | | |
| 2. category CE | .739 | | | .351 |
| 1. keyword CE | .683 | | | .334 |
| 9. show number CE | .673 | | | |
| 10. compare CE | .386 | | | |
| 19. forum CE | | .899 | | |
| 18. live chat CE | | .878 | | |
| 20. ask offline CE | | .851 | | |
| 15. pay offline CE | | .819 | | |
| 14. 3rd party checkout CE | | .352 | | |
| 13. express checkout CE | | | -.858 | |
| 12. save payment CE | | | -.822 | |
| 11. save address CE | | | -.768 | |
| 4. suggest alternative CE | | | | .865 |
| 5. suggest additional CE | | | | .701 |
| 16. FAQs CE | | | | .465 |
| 17. email/form CE | | | | .432 |
| 3. interactive CE | | | -.335 | .337 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 9 iterations.

**Table 11.25 Customers – CE: Pattern Matrix**

**Structure Matrix**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 7. filter CE | .850 | | -.468 | .459 |
| 8. sort CE | .847 | | -.542 | .450 |
| 2. category CE | .810 | | | .616 |
| 6. highlight offer CE | .797 | .431 | -.472 | |
| 9. show number CE | .781 | .390 | -.596 | |
| 1. keyword CE | .766 | | -.334 | .591 |
| 10. compare CE | .657 | .559 | -.593 | .446 |
| 19. forum CE | | .894 | -.359 | |
| 18. live chat CE | | .877 | -.353 | |
| 20. ask offline CE | .355 | .844 | | |
| 15. pay offline CE | .374 | .827 | | |
| 14. 3rd party checkout CE | .497 | .521 | -.484 | |
| 13. express checkout CE | .460 | .380 | -.895 | |
| 12. save payment CE | .499 | | -.891 | .496 |
| 11. save address CE | .504 | | -.850 | .505 |
| 3. interactive CE | .503 | .553 | -.611 | .588 |
| 4. suggest alternative CE | .418 | .338 | -.487 | .913 |
| 5. suggest additional CE | .539 | | -.461 | .822 |
| 16. FAQs CE | .564 | .503 | -.455 | .670 |
| 17. email/form CE | .558 | .474 | -.451 | .640 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

**Table 11.26 Customers – CE: Structure Matrix**

**Component Correlation Matrix**

| Component | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | 1.000 | .332 | -.460 | .458 |
| 2 | .332 | 1.000 | -.333 | .258 |
| 3 | -.460 | -.333 | 1.000 | -.381 |
| 4 | .458 | .258 | -.381 | 1.000 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

**Table 11.27 Customers – CE: Component Correlation Matrix**

The results of the reliability analysis on the four factors are presented in Table 11.28. All factors appear to have high reliabilities, and all Cronbach's alpha are above .85. However, it shows the deletion of variable 10. compare and variable 14. 3rd party checkout may improve the reliability of their associated factors. Thus, these two variables are deleted.

| | Variable | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|---|---|
| **Factor 1 overall α=.902 N=7** | 1. keyword CE | 19.83 | 93.062 | .684 | .891 |
| | 2. category CE | 19.90 | 90.776 | .750 | .884 |
| | 6. highlight offer CE | 20.79 | 85.452 | .669 | .893 |
| | 7. filter CE | 20.17 | 85.425 | .763 | .881 |
| | 8. sort CE | 19.89 | 89.394 | .757 | .883 |
| | 9. show number CE | 20.16 | 86.245 | .732 | .884 |
| | 10. compare CE | 20.90 | 84.027 | .671 | .894 |
| **Factor 2 overall α=.872 N=5** | ~~14. 3rd party checkout CE~~ | ~~6.06~~ | ~~97.053~~ | ~~.476~~ | ~~.896~~ |
| | 15. pay offline CE | 7.41 | 84.216 | .738 | .835 |
| | 18. live chat CE | 7.33 | 83.603 | .773 | .827 |
| | 19. forum CE | 7.59 | 83.826 | .787 | .824 |
| | 20. ask offline CE | 7.14 | 83.879 | .736 | .836 |
| **Factor 3 overall α=.856 N=4** | ~~3. interactive CE~~ | ~~9.18~~ | ~~41.868~~ | ~~.591~~ | ~~.859~~ |
| | 11. save address CE | 8.68 | 41.968 | .686 | .824 |
| | 12. save payment CE | 8.93 | 34.816 | .802 | .770 |
| | 13. express checkout CE | 9.01 | 35.728 | .732 | .803 |
| **Factor 4 overall α=.886 N=7** | 1. keyword CE | 18.84 | 100.444 | .633 | .876 |
| | 2. category CE | 18.98 | 97.795 | .691 | .870 |
| | 3. interactive CE | 19.85 | 89.881 | .647 | .874 |
| | 4. suggest alternative CE | 20.01 | 85.935 | .731 | .863 |
| | 5. suggest additional CE | 19.81 | 89.271 | .703 | .866 |
| | 16. FAQs CE | 19.42 | 89.589 | .700 | .867 |
| | 17. email/form CE | 19.32 | 92.432 | .680 | .869 |

**Table 11.28 Customers – CE: Reliability Analysis**

### 11.3.4. Customers – Repurchase Intention (eigenvalue>1)

This section presents and interprets the PCA output based on the data collected from customers of a retail website on their perceived influences of the retail website features on repurchase intention.

Table 11.29 presents the Correlation Matrix. All correlation coefficient values greater than .33 are highlighted. This shows that at least some variables are correlated, and confirms that PCA is appropriate for analysis. Table 11.30 shows the result of KMO and Bartlett's test. The KMO value is 0.912 which is great for PCA. The Bartlett's test of sphericity shows a significance value of .000 which also confirms that PCA is appropriate.

**Correlation Matrix**

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Correlation | 1 | 1.000 | .864 | .484 | .566 | .555 | .611 | .724 | .705 | .614 | .648 | .568 | .630 | .564 | .506 | .360 | .553 | .551 | .342 | .295 | .315 |
| | 2 | .864 | 1.000 | .492 | .583 | .590 | .656 | .743 | .676 | .643 | .675 | .538 | .590 | .554 | .502 | .392 | .592 | .559 | .289 | .243 | .307 |
| | 3 | .484 | .492 | 1.000 | .572 | .523 | .579 | .532 | .543 | .616 | .594 | .616 | .617 | .607 | .465 | .436 | .622 | .586 | .576 | .596 | .512 |
| | 4 | .566 | .583 | .572 | 1.000 | .887 | .536 | .555 | .486 | .488 | .561 | .630 | .620 | .608 | .456 | .453 | .561 | .514 | .435 | .469 | .392 |
| | 5 | .555 | .590 | .523 | .887 | 1.000 | .555 | .557 | .494 | .507 | .586 | .549 | .570 | .592 | .418 | .475 | .536 | .497 | .396 | .448 | .426 |
| | 6 | .611 | .656 | .579 | .536 | .555 | 1.000 | .711 | .656 | .627 | .701 | .531 | .521 | .572 | .474 | .432 | .497 | .526 | .416 | .446 | .419 |
| | 7 | .724 | .743 | .532 | .555 | .557 | .711 | 1.000 | .810 | .747 | .618 | .541 | .508 | .544 | .521 | .449 | .564 | .576 | .404 | .358 | .413 |
| | 8 | .705 | .676 | .543 | .486 | .494 | .656 | .810 | 1.000 | .745 | .672 | .661 | .537 | .542 | .456 | .423 | .627 | .606 | .325 | .310 | .373 |
| | 9 | .614 | .643 | .616 | .488 | .507 | .627 | .747 | .745 | 1.000 | .661 | .586 | .586 | .603 | .550 | .445 | .531 | .570 | .445 | .402 | .415 |
| | 10 | .648 | .675 | .594 | .561 | .586 | .701 | .618 | .672 | .661 | 1.000 | .579 | .542 | .535 | .474 | .543 | .581 | .557 | .452 | .490 | .547 |
| | 11 | .568 | .538 | .616 | .630 | .549 | .531 | .541 | .661 | .586 | .579 | 1.000 | .797 | .732 | .425 | .397 | .543 | .568 | .334 | .323 | .276 |
| | 12 | .630 | .590 | .617 | .620 | .570 | .521 | .508 | .537 | .586 | .542 | .797 | 1.000 | .850 | .479 | .350 | .508 | .533 | .355 | .349 | .310 |
| | 13 | .564 | .554 | .607 | .608 | .592 | .572 | .544 | .542 | .603 | .535 | .732 | .850 | 1.000 | .490 | .349 | .454 | .488 | .407 | .402 | .305 |
| | 14 | .506 | .502 | .465 | .456 | .418 | .474 | .521 | .456 | .550 | .474 | .425 | .479 | .490 | 1.000 | .455 | .545 | .423 | .468 | .419 | .424 |
| | 15 | .360 | .392 | .436 | .453 | .475 | .432 | .449 | .423 | .445 | .543 | .397 | .350 | .349 | .455 | 1.000 | .408 | .398 | .598 | .581 | .630 |
| | 16 | .553 | .592 | .622 | .561 | .536 | .497 | .564 | .627 | .531 | .581 | .543 | .508 | .454 | .545 | .408 | 1.000 | .754 | .449 | .513 | .513 |
| | 17 | .551 | .559 | .586 | .514 | .497 | .526 | .576 | .606 | .570 | .557 | .568 | .533 | .488 | .423 | .398 | .754 | 1.000 | .452 | .436 | .511 |
| | 18 | .342 | .289 | .576 | .435 | .396 | .416 | .404 | .325 | .445 | .452 | .334 | .355 | .407 | .468 | .598 | .449 | .452 | 1.000 | .839 | .663 |
| | 19 | .295 | .243 | .596 | .469 | .448 | .446 | .358 | .310 | .402 | .490 | .323 | .349 | .402 | .419 | .581 | .513 | .436 | .839 | 1.000 | .636 |
| | 20 | .315 | .307 | .512 | .392 | .426 | .419 | .413 | .373 | .415 | .547 | .276 | .310 | .305 | .424 | .630 | .513 | .511 | .663 | .636 | 1.000 |
| Sig. (1-tailed) | 1 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 2 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .002 | .000 |
| | 3 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 4 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 5 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 6 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 7 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 8 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 9 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 10 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 11 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .001 |
| | 12 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 13 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 14 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 |
| | 15 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 |
| | 16 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 |
| | 17 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 |
| | 18 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 |
| | 19 | .000 | .002 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 |
| | 20 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .001 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | |

**Table 11.29 Customers – RI (eigenvalue>1): Correlation Matrix**

**KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .912 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2410.429 |
| | Df | 190 |
| | Sig. | .000 |

**Table 11.30 Customers – RI (eigenvalue>1): KMO and Bartlett's Test**

The communalities table (Table 11.31) presents the communality of each variable. As shown in Table 11.32, 20 factors were computed; however, only the 3 factors with an eigenvalue of 1 or greater were retained. These Three factors account for 55.379%, 9.714%, and 5.755% of the total variance, respectively. That is 70.847% of the total variance is attributed to these three factors. The remaining 16 factors account for only 29.153% of the variance. Thus, a model with 3 factors may be adequate to represent the data. The loadings of each variable onto each factor before rotation are presented in Table 11.33.

**Communalities**

| | Initial | Extraction |
|---|---|---|
| 1. keyword RI | 1.000 | .759 |
| 2. category RI | 1.000 | .798 |
| 3. interactive RI | 1.000 | .659 |
| 4. suggest alternative RI | 1.000 | .712 |
| 5. suggest additional RI | 1.000 | .642 |
| 6. highlight offer RI | 1.000 | .645 |
| 7. filter RI | 1.000 | .804 |
| 8. sort RI | 1.000 | .794 |
| 9. show number RI | 1.000 | .692 |
| 10. compare RI | 1.000 | .690 |
| 11. save address RI | 1.000 | .761 |
| 12. save payment RI | 1.000 | .835 |
| 13. express checkout RI | 1.000 | .796 |
| 14. 3rd party checkout RI | 1.000 | .456 |
| 15. pay offline RI | 1.000 | .598 |
| 16. FAQs RI | 1.000 | .599 |
| 17. email/form RI | 1.000 | .570 |
| 18. live chat RI | 1.000 | .800 |
| 19. forum RI | 1.000 | .824 |
| 20. ask offline RI | 1.000 | .738 |

Extraction Method: Principal Component Analysis.

**Table 11.31 Customers – RI (eigenvalue>1): Communalities**

**Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings[a] |
|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total |
| 1 | 11.076 | 55.379 | 55.379 | 11.076 | 55.379 | 55.379 | 9.555 |
| 2 | 1.943 | 9.714 | 65.093 | 1.943 | 9.714 | 65.093 | 6.236 |
| 3 | 1.151 | 5.755 | 70.847 | 1.151 | 5.755 | 70.847 | 8.608 |
| 4 | .834 | 4.172 | 75.019 | | | | |
| 5 | .760 | 3.801 | 78.820 | | | | |
| 6 | .639 | 3.195 | 82.015 | | | | |
| 7 | .541 | 2.705 | 84.720 | | | | |
| 8 | .462 | 2.310 | 87.030 | | | | |
| 9 | .421 | 2.107 | 89.137 | | | | |
| 10 | .357 | 1.783 | 90.919 | | | | |
| 11 | .337 | 1.684 | 92.604 | | | | |
| 12 | .288 | 1.438 | 94.042 | | | | |
| 13 | .270 | 1.352 | 95.394 | | | | |
| 14 | .223 | 1.114 | 96.508 | | | | |
| 15 | .154 | .769 | 97.277 | | | | |
| 16 | .144 | .720 | 97.997 | | | | |
| 17 | .131 | .656 | 98.653 | | | | |
| 18 | .102 | .512 | 99.165 | | | | |
| 19 | .087 | .435 | 99.600 | | | | |
| 20 | .080 | .400 | 100.000 | | | | |

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

**Table 11.32 Customers – RI (eigenvalue>1): Total Variance Explained**

**Component Matrix[a]**

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| 10. compare RI | .813 | | |
| 7. filter RI | .808 | | |
| 9. show number RI | .800 | | |
| 8. sort RI | .796 | | |
| 2. category RI | .786 | -.357 | |
| 1. keyword RI | .782 | -.335 | |
| 6. highlight offer RI | .778 | | |
| 3. interactive RI | .778 | | |
| 4. suggest alternative RI | .768 | | .348 |
| 12. save payment RI | .765 | | .432 |
| 16. FAQs RI | .765 | | |
| 11. save address RI | .762 | | .338 |
| 13. express checkout RI | .760 | | .423 |
| 5. suggest additional RI | .754 | | |
| 17. email/form RI | .749 | | |
| 14. 3rd party checkout RI | .665 | | |
| 15. pay offline RI | .629 | .439 | |
| 20. ask offline RI | .614 | .580 | |
| 19. forum RI | .624 | .651 | |
| 18. live chat RI | .630 | .634 | |

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

**Table 11.33 Customers – RI (eigenvalue>1): Component Matrix**

Table 11.34 presents the three factors after Oblique rotation. As discussed in Section 11.2.2 (page 119), both Pattern Matrix (Table 11.34) and Structure Matrix (Table 11.35) are reported. However, only the Pattern Matrix is interpreted. This shows that there is one cross-loaded variable, i.e. 3. interactive. Table 11.36 presents the correlation coefficients between the three factors. It suggests that all the factors are correlated to some degree. Thus, it confirms that the factors are not independent of each other, which means Oblique rotation is appropriate.

**Pattern Matrix**[a]

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| 7. filter RI | .941 | | |
| 8. sort RI | .933 | | |
| 2. category RI | .893 | | |
| 1. keyword RI | .826 | | |
| 9. show number RI | .721 | | |
| 6. highlight offer RI | .676 | | |
| 10. compare RI | .637 | | |
| 17. email/form RI | .493 | | |
| 16. FAQs RI | .482 | | |
| 14. 3rd party checkout RI | .400 | | |
| 19. forum RI | | .889 | |
| 18. live chat RI | | .876 | |
| 20. ask offline RI | | .825 | |
| 15. pay offline RI | | .670 | |
| 12. save payment RI | | | .937 |
| 13. express checkout RI | | | .907 |
| 11. save address RI | | | .811 |
| 4. suggest alternative RI | | | .763 |
| 5. suggest additional RI | | | .650 |
| 3. interactive RI | | .374 | .479 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 6 iterations.

**Table 11.34 Customers – RI (eigenvalue>1): Pattern Matrix**

**Structure Matrix**

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| 7. filter RI | .895 | .417 | .585 |
| 8. sort RI | .889 | .360 | .600 |
| 2. category RI | .881 | | .641 |
| 1. keyword RI | .859 | | .653 |
| 9. show number RI | .824 | .460 | .630 |
| 10. compare RI | .798 | .564 | .623 |
| 6. highlight offer RI | .792 | .469 | .611 |
| 16. FAQs RI | .713 | .579 | .603 |
| 17. email/form RI | .709 | .535 | .602 |
| 14. 3rd party checkout RI | .612 | .524 | .520 |
| 19. forum RI | .378 | .898 | .465 |
| 18. live chat RI | .406 | .891 | .444 |
| 20. ask offline RI | .466 | .848 | .350 |
| 15. pay offline RI | .497 | .754 | .417 |
| 12. save payment RI | .631 | | .910 |
| 13. express checkout RI | .617 | .362 | .892 |
| 11. save address RI | .659 | | .865 |
| 4. suggest alternative RI | .606 | .488 | .833 |
| 5. suggest additional RI | .617 | .485 | .783 |
| 3. interactive RI | .622 | .639 | .725 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

**Table 11.35 Customers – RI (eigenvalue>1): Structure Matrix**

**Component Correlation Matrix**

| Component | 1 | 2 | 3 |
|---|---|---|---|
| 1 | 1.000 | .457 | .697 |
| 2 | .457 | 1.000 | .441 |
| 3 | .697 | .441 | 1.000 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

**Table 11.36 Customers – RI (eigenvalue>1): Component Correlation matrix**

The results of the reliability analysis on the three factors are presented in Table 11.37. All factors appear to have high reliability, and all Cronbach's alpha are above .89. However, it shows the deletion of variable 14. (3rd party checkout from) may improve the reliability of the associated factor. Therefore, this variable is deleted.

| | Variable | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|---|---|
| **Factor 1 overall α=.933 N=10** | 1. keyword RI | 29.64 | 219.605 | .791 | .924 |
| | 2. category RI | 29.64 | 220.196 | .806 | .924 |
| | 6. highlight offer RI | 30.36 | 213.464 | .714 | .927 |
| | 7. filter RI | 29.80 | 210.604 | .822 | .922 |
| | 8. sort RI | 29.56 | 217.585 | .803 | .923 |
| | 9. show number RI | 29.84 | 211.586 | .796 | .923 |
| | 10. compare RI | 30.41 | 213.499 | .703 | .928 |
| | ~~14. 3rd party checkout RI~~ | ~~30.16~~ | ~~212.179~~ | ~~.591~~ | ~~.936~~ |
| | 16. FAQs RI | 30.02 | 210.575 | .726 | .927 |
| | 17. email/form RI | 29.92 | 213.819 | .720 | .927 |
| **Factor 2 overall α=.890 N=5** | 3. interactive RI | 7.37 | 84.566 | .632 | .888 |
| | 15. pay offline RI | 8.05 | 81.544 | .672 | .880 |
| | 18. live chat RI | 8.11 | 76.059 | .818 | .847 |
| | 19. forum RI | 8.36 | 75.499 | .807 | .849 |
| | 20. ask offline RI | 7.90 | 77.760 | .739 | .865 |
| **Factor 3 overall α=.908 N=6** | 3. interactive RI | 14.85 | 96.211 | .663 | .904 |
| | 4. suggest alternative RI | 14.85 | 95.189 | .748 | .892 |
| | 5. suggest additional RI | 14.76 | 97.211 | .707 | .897 |
| | 11. save address RI | 14.37 | 95.663 | .773 | .889 |
| | 12. save payment RI | 14.63 | 87.961 | .800 | .884 |
| | 13. express checkout RI | 14.64 | 89.923 | .793 | .885 |

**Table 11.37 Customers – RI (eigenvalue>1): Reliability Analysis**

However, the PCA on the other three categories of data have produced four common factors. It might be interesting to run PCA on the same data and request that it extracts four factors instead of retaining only the factors with an eigenvalue of greater than one. The output is presented in the next section.

### 11.3.5. Customers – Repurchase Intention (factor No.= 4)

Table 11.38 presents the Correlation Matrix. All correlation coefficient values of greater than .33 are highlighted. This shows that at least some variables are correlated, and confirms that PCA is appropriate for the analysis. Table 11.39 shows the result of KMO and Bartlett's test. The KMO value is 0.912, which is superb for PCA. The Bartlett's test of sphericity shows a significance value of .000 which also confirms that PCA is appropriate.

**Correlation Matrix**

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Correlation | 1 | 1.000 | .864 | .484 | .566 | .555 | .611 | .724 | .705 | .614 | .648 | .568 | .630 | .564 | .506 | .360 | .553 | .551 | .342 | .295 | .315 |
| | 2 | .864 | 1.000 | .492 | .583 | .590 | .656 | .743 | .676 | .643 | .675 | .538 | .590 | .554 | .502 | .392 | .592 | .559 | .289 | .243 | .307 |
| | 3 | .484 | .492 | 1.000 | .572 | .523 | .579 | .532 | .543 | .616 | .594 | .616 | .617 | .607 | .465 | .436 | .622 | .586 | .576 | .596 | .512 |
| | 4 | .566 | .583 | .572 | 1.000 | .887 | .536 | .555 | .486 | .488 | .561 | .630 | .620 | .608 | .456 | .453 | .561 | .514 | .435 | .469 | .392 |
| | 5 | .555 | .590 | .523 | .887 | 1.000 | .555 | .557 | .494 | .507 | .586 | .549 | .570 | .592 | .418 | .475 | .536 | .497 | .396 | .448 | .426 |
| | 6 | .611 | .656 | .579 | .536 | .555 | 1.000 | .711 | .656 | .627 | .701 | .531 | .521 | .572 | .474 | .432 | .497 | .526 | .416 | .446 | .419 |
| | 7 | .724 | .743 | .532 | .555 | .557 | .711 | 1.000 | .810 | .747 | .618 | .541 | .508 | .544 | .521 | .449 | .564 | .576 | .404 | .358 | .413 |
| | 8 | .705 | .676 | .543 | .486 | .494 | .656 | .810 | 1.000 | .745 | .672 | .661 | .537 | .542 | .456 | .423 | .627 | .606 | .325 | .310 | .373 |
| | 9 | .614 | .643 | .616 | .488 | .507 | .627 | .747 | .745 | 1.000 | .661 | .586 | .586 | .603 | .550 | .445 | .531 | .570 | .445 | .402 | .415 |
| | 10 | .648 | .675 | .594 | .561 | .586 | .701 | .618 | .672 | .661 | 1.000 | .579 | .542 | .535 | .474 | .543 | .581 | .557 | .452 | .490 | .547 |
| | 11 | .568 | .538 | .616 | .630 | .549 | .531 | .541 | .661 | .586 | .579 | 1.000 | .797 | .732 | .425 | .397 | .543 | .568 | .334 | .323 | .276 |
| | 12 | .630 | .590 | .617 | .620 | .570 | .521 | .508 | .537 | .586 | .542 | .797 | 1.000 | .850 | .479 | .350 | .508 | .533 | .355 | .349 | .310 |
| | 13 | .564 | .554 | .607 | .608 | .592 | .572 | .544 | .542 | .603 | .535 | .732 | .850 | 1.000 | .490 | .349 | .454 | .488 | .407 | .402 | .305 |
| | 14 | .506 | .502 | .465 | .456 | .418 | .474 | .521 | .456 | .550 | .474 | .425 | .479 | .490 | 1.000 | .455 | .545 | .423 | .468 | .419 | .424 |
| | 15 | .360 | .392 | .436 | .453 | .475 | .432 | .449 | .423 | .445 | .543 | .397 | .350 | .349 | .455 | 1.000 | .408 | .398 | .598 | .581 | .630 |
| | 16 | .553 | .592 | .622 | .561 | .536 | .497 | .564 | .627 | .531 | .581 | .543 | .508 | .454 | .545 | .408 | 1.000 | .754 | .449 | .513 | .513 |
| | 17 | .551 | .559 | .586 | .514 | .497 | .526 | .576 | .606 | .570 | .557 | .568 | .533 | .488 | .423 | .398 | .754 | 1.000 | .452 | .436 | .511 |
| | 18 | .342 | .289 | .576 | .435 | .396 | .416 | .404 | .325 | .445 | .452 | .334 | .355 | .407 | .468 | .598 | .449 | .452 | 1.000 | .839 | .663 |
| | 19 | .295 | .243 | .596 | .469 | .448 | .446 | .358 | .310 | .402 | .490 | .323 | .349 | .402 | .419 | .581 | .513 | .436 | .839 | 1.000 | .636 |
| | 20 | .315 | .307 | .512 | .392 | .426 | .419 | .413 | .373 | .415 | .547 | .276 | .310 | .305 | .424 | .630 | .513 | .511 | .663 | .636 | 1.000 |
| Sig. (1-tailed) | 1 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 2 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .002 | .000 |
| | 3 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 4 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 5 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 6 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 7 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 8 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 9 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 10 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 11 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .001 |
| | 12 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 13 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | 14 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 |
| | 15 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 |
| | 16 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 |
| | 17 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 |
| | 18 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 |
| | 19 | .000 | .002 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 |
| | 20 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .001 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | |

**Table 11.38 Customers – RI (factor No.= 4): Correlation Matrix**

**KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .912 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2410.429 |
| | df | 190 |
| | Sig. | .000 |

**Table 11.39 Customers – RI (factor No.=4): KMO and Bartlett's Test**

The communalities table (Table 11.40) presents the communality of each variable. As requested, the computation extracted four factors, as requested (Table 11.41). These four factors account for 55.379%, 9.714%, 5.755%, and 4.172% of the total variance, respectively, that is, 75.019% of the total variance that is attributed to these three factors. The remaining 16 factors account for only 24.621% of the variance. Thus, a model with 4 factors may be adequate to represent the data. The loadings of each variable onto each factor before rotation are presented in Table 11.42.

**Communalities**

| | Initial | Extraction |
|---|---|---|
| 1. keyword RI | 1.000 | .772 |
| 2. category RI | 1.000 | .831 |
| 3. interactive RI | 1.000 | .724 |
| 4. suggest alternative RI | 1.000 | .888 |
| 5. suggest additional RI | 1.000 | .893 |
| 6. highlight offer RI | 1.000 | .650 |
| 7. filter RI | 1.000 | .806 |
| 8. sort RI | 1.000 | .810 |
| 9. show number RI | 1.000 | .722 |
| 10. compare RI | 1.000 | .699 |
| 11. save address RI | 1.000 | .800 |
| 12. save payment RI | 1.000 | .867 |
| 13. express checkout RI | 1.000 | .818 |
| 14. 3rd party checkout RI | 1.000 | .462 |
| 15. pay offline RI | 1.000 | .645 |
| 16. FAQs RI | 1.000 | .622 |
| 17. email/form RI | 1.000 | .623 |
| 18. live chat RI | 1.000 | .807 |
| 19. forum RI | 1.000 | .825 |
| 20. ask offline RI | 1.000 | .738 |

Extraction Method: Principal Component Analysis.

**Table 11.40 Customers – RI (factor No.= 4): Communalities**

**Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings[a] |
|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total |
| 1 | 11.076 | 55.379 | 55.379 | 11.076 | 55.379 | 55.379 | 9.378 |
| 2 | 1.943 | 9.714 | 65.093 | 1.943 | 9.714 | 65.093 | 6.341 |
| 3 | 1.151 | 5.755 | 70.847 | 1.151 | 5.755 | 70.847 | 7.521 |
| 4 | .834 | 4.172 | 75.019 | .834 | 4.172 | 75.019 | 2.826 |
| 5 | .760 | 3.801 | 78.820 | | | | |
| 6 | .639 | 3.195 | 82.015 | | | | |
| 7 | .541 | 2.705 | 84.720 | | | | |
| 8 | .462 | 2.310 | 87.030 | | | | |
| 9 | .421 | 2.107 | 89.137 | | | | |
| 10 | .357 | 1.783 | 90.919 | | | | |
| 11 | .337 | 1.684 | 92.604 | | | | |
| 12 | .288 | 1.438 | 94.042 | | | | |
| 13 | .270 | 1.352 | 95.394 | | | | |
| 14 | .223 | 1.114 | 96.508 | | | | |
| 15 | .154 | .769 | 97.277 | | | | |
| 16 | .144 | .720 | 97.997 | | | | |
| 17 | .131 | .656 | 98.653 | | | | |
| 18 | .102 | .512 | 99.165 | | | | |
| 19 | .087 | .435 | 99.600 | | | | |
| 20 | .080 | .400 | 100.000 | | | | |

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

**Table 11.41 Customers – RI (factor No.= 4): Total Variance Explained**

**Component Matrix[a]**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 10. compare RI | .813 | | | |
| 7. filter RI | .808 | | | |
| 9. show number RI | .800 | | | |
| 8. sort RI | .796 | | | |
| 2. category RI | .786 | -.357 | | |
| 1. keyword RI | .782 | -.335 | | |
| 6. highlight offer RI | .778 | | | |
| 3. interactive RI | .778 | | | |
| 4. suggest alternative RI | .768 | | .348 | .419 |
| 12. save payment RI | .765 | | .432 | |
| 16. FAQs RI | .765 | | | |
| 11. save address RI | .762 | | .338 | |
| 13. express checkout RI | .760 | | .423 | |
| 5. suggest additional RI | .754 | | | .502 |
| 17. email/form RI | .749 | | | |
| 14. 3rd party checkout RI | .665 | | | |
| 15. pay offline RI | .629 | .439 | | |
| 20. ask offline RI | .614 | .580 | | |
| 19. forum RI | .624 | .651 | | |
| 18. live chat RI | .630 | .634 | | |

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

**Table 11.42 Customers – RI (factor No.= 4): Component Matrix**

Table 11.43 presents the four factors after Oblique rotation. As discussed in Section 11.2.2 (page 119), both Pattern Matrix (Table 11.43) and Structure Matrix (Table 11.44) are reported. However, only the Pattern Matrix is interpreted. It shows two cross-loaded variables, 3. interactive and 4. suggest alternative. Table 11.45 presents the correlation coefficients between the four factors. This suggests that all the factors are correlated to some degree, except the relatively smaller correlation between factor 2 and factor 4. Thus, it may be seen that the factors are not independent of each other, which means Oblique rotation is appropriate.

**Pattern Matrix**[a]

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 7. filter RI | .917 | | | |
| 8. sort RI | .899 | | | |
| 2. category RI | .890 | | | |
| 1. keyword RI | .822 | | | |
| 9. show number RI | .693 | | | |
| 6. highlight offer RI | .667 | | | |
| 10. compare RI | .628 | | | |
| 17. email/form RI | .468 | | | |
| 16. FAQs RI | .462 | | | |
| 14. 3rd party checkout RI | .386 | | | |
| 19. forum RI | | .902 | | |
| 18. live chat RI | | .888 | | |
| 20. ask offline RI | | .826 | | |
| 15. pay offline RI | | .668 | | |
| 12. save payment RI | | | .885 | |
| 13. express checkout RI | | | .841 | |
| 11. save address RI | | | .796 | |
| 3. interactive RI | | .403 | .542 | |
| 5. suggest additional RI | | | | .691 |
| 4. suggest alternative RI | | | .380 | .643 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 9 iterations.

**Table 11.43 Customers – RI (factor No.= 4): Pattern Matrix**

**Structure Matrix**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 7. filter RI | .896 | .425 | .520 | |
| 8. sort RI | .889 | .376 | .592 | |
| 2. category RI | .882 | | .542 | .457 |
| 1. keyword RI | .858 | | .576 | .409 |
| 9. show number RI | .820 | .476 | .634 | |
| 10. compare RI | .795 | .568 | .541 | .382 |
| 6. highlight offer RI | .789 | .474 | .540 | .356 |
| 16. FAQs RI | .707 | .592 | .598 | |
| 17. email/form RI | .702 | .551 | .622 | |
| 14. 3rd party checkout RI | .606 | .533 | .498 | |
| 19. forum RI | .366 | .898 | .419 | |
| 18. live chat RI | .396 | .894 | .413 | |
| 20. ask offline RI | .462 | .848 | | |
| 15. pay offline RI | .494 | .747 | | .388 |
| 12. save payment RI | .613 | .341 | .924 | .339 |
| 13. express checkout RI | .598 | .375 | .896 | .355 |
| 11. save address RI | .642 | .340 | .884 | |
| 3. interactive RI | .607 | .654 | .749 | |
| 5. suggest additional RI | .607 | .470 | .586 | .837 |
| 4. suggest alternative RI | .594 | .476 | .660 | .798 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

**Table 11.44 Customers – RI (factor No.= 4): Structure Matrix**

**Component Correlation Matrix**

| Component | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | 1.000 | .460 | .621 | .322 |
| 2 | .460 | 1.000 | .397 | .193 |
| 3 | .621 | .397 | 1.000 | .261 |
| 4 | .322 | .193 | .261 | 1.000 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

**Table 11.45 Customers – RI (factor No.= 4): Component Correlation Matrix**

The results of the reliability analysis on the four factors are presented in Table 11.46. All factors appear to have high reliability, and all Cronbach's alpha are above .89. However, it shows the deletion of variable 14. 3rd party checkout may improve the reliability of the associated factor. Therefore, this variable is deleted.

| | Variable | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|---|---|
| **Factor 1 overall α=.933 N=10** | 1. keyword RI | 29.64 | 219.605 | .791 | .924 |
| | 2. category RI | 29.64 | 220.196 | .806 | .924 |
| | 6. highlight offer RI | 30.36 | 213.464 | .714 | .927 |
| | 7. filter RI | 29.80 | 210.604 | .822 | .922 |
| | 8. sort RI | 29.56 | 217.585 | .803 | .923 |
| | 9. show number RI | 29.84 | 211.586 | .796 | .923 |
| | 10. compare RI | 30.41 | 213.499 | .703 | .928 |
| | ~~14. 3rd party checkout RI~~ | ~~30.16~~ | ~~212.179~~ | ~~.591~~ | ~~.936~~ |
| | 16. FAQs RI | 30.02 | 210.575 | .726 | .927 |
| | 17. email/form RI | 29.92 | 213.819 | .720 | .927 |
| **Factor 2 overall α=.890 N=5** | 3. interactive RI | 7.37 | 84.566 | .632 | .888 |
| | 15. pay offline RI | 8.05 | 81.544 | .672 | .880 |
| | 18. live chat RI | 8.11 | 76.059 | .818 | .847 |
| | 19. forum RI | 8.36 | 75.499 | .807 | .849 |
| | 20. ask offline RI | 7.90 | 77.760 | .739 | .865 |
| **Factor 3 overall α=.897 N=5** | 3. interactive RI | 12.04 | 65.369 | .668 | .892 |
| | 4. suggest alternative RI | 12.07 | 67.569 | .657 | .893 |
| | 11. save address RI | 11.57 | 64.561 | .794 | .866 |
| | 12. save payment RI | 11.82 | 58.226 | .820 | .858 |
| | 13. express checkout RI | 11.83 | 60.077 | .805 | .861 |
| **Factor 4 overall α=.913 N=2** | 4. suggest alternative RI | 2.83 | 4.828 | .840 | - |
| | 5. suggest additional RI | 2.75 | 5.148 | .840 | - |

**Table 11.46 Customers – RI (factor No.=4): Reliability Analysis**

By comparing the results of PCA and reliability analysis based on the Customer-Repurchase Intention data, it is found that the only difference is that variable 4. suggest alternative and variable 5. suggest additional are separated from the original factor 3 and form a new factor. However, the model with four factors seems to be more consistent with the output of analysis, based on the other three categories of data. Therefore, this model with four factors will be adopted for further discussion, rather than the model with three factors.

## 11.4. Result

To summarise the results, all 20 variables and their correlated factors are listed in Table 11.47. Although the PCA does not tell that the four factors extracted from the four data categories represent the same underlying dimensions, it appears that most variables are correlated to the same factor in all the four categories of data. Therefore, it may suggest that the factors extracted from one category of data have the same meaning as the factors extracted from other categories of data. However, seven variables (highlighted) need to be discussed, as there are some variations regarding their correlated factors.

| Variables | Student Sample | | Customer Sample | |
|---|---|---|---|---|
| | Customer Experience | Repurchase Intention | Customer Experience | Repurchase Intention |
| 1. keyword | 1 | 1 | 1 and 4 | 1 |
| 2. category | 1 | 1 | 1 and 4 | 1 |
| 3. interactive | 1 | 1 | 4 | 2 and 3 |
| 4. suggest alternative | 4 | 4 | 4 | 3 and 4 |
| 5. suggest additional | 4 | 4 | 4 | 4 |
| 6. highlight offer | 1 | 1 | 1 | 1 |
| 7. filter | 1 | 1 | 1 | 1 |
| 8. sort | 1 | 1 | 1 | 1 |
| 9. show number | 1 | 1 | 1 | 1 |
| 10. compare | 1 | 1 | 1 | 1 |
| 11. save address | 3 | 3 | 3 | 3 |
| 12. save payment | 3 | 3 | 3 | 3 |
| 13. express checkout | 3 | 3 | 3 | 3 |
| ~~14. 3rd party checkout~~ | ~~3~~ | ~~3~~ | ~~2~~ | ~~1~~ |
| 15. pay offline | 2 | 2 | 2 | 2 |
| 16. FAQs | 1 | 1 | 4 | 1 |
| 17. email/form | - | 1 | 4 | 1 |
| 18. live chat | 2 | 2 | 2 | 2 |
| 19. forum | 2 | 2 | 2 | 2 |
| 20. ask offline | 2 | 2 | 2 | 2 |

**Table 11.47 Summary of PCA Results**

Variable 14. 3rd party checkout was found to negatively affect factor reliability in the PCA of all the four categories of data. Therefore, it is removed from the list of variables for discussion.

Variable 17. email/form is not significantly correlated to any factors according to the Student – Customer Experience data. Thus, this variable is also removed.

Variables 3. interactive and 16. FAQs appear to correlate to completely different factors in the four categories of data. This may potentially make the interpretation difficult. Therefore, these two variables are removed from discussion in order to produce a more interpretable result of factors.

Variable 1. keyword 2. category and 4. suggest alternative appear to be cross-loaded on two factors in the PCA of one of the four data categories. However, one of the two factors is commonly identified as being the only factor that the variable correlated to in the other three categories of data. According to Ho (2006) (see 11.2.3 on page 124), cross-loaded variables can be assigned to the factor that they are most conceptually/logically representative of. Therefore, in order to reduce the complexity of the data, these cross-loaded variables are assigned to their most commonly correlated factors, i.e. assign all these three variables to factor 4.

Therefore, 16 variables that correlate to 4 factors are retained for further discussion (Table 11.48), i.e. there are four types of retail website features in terms of the way to influence customer experience and repurchase intention.

| Retail Website Feature | Type |
|---|---|
| 1. keyword | 1 |
| 2. category | 1 |
| 4. suggest alternative | 4 |
| 5. suggest additional | 4 |
| 6. highlight offer | 1 |
| 7. filter | 1 |
| 8. sort | 1 |
| 9. show number | 1 |
| 10. compare | 1 |
| 11. save address | 3 |
| 12. save payment | 3 |
| 13. express checkout | 3 |
| 15. pay offline | 2 |
| 18. live chat | 2 |
| 19. forum | 2 |
| 20. ask offline | 2 |

**Table 11.48 Retail Website Features and Their Types**

# 12. Findings and Discussions

## 12.1. Introduction

The last four chapters presented the process and findings of the three individual studies, and performed a principle component analysis, based on the data from Study 3. Study 1 identified twenty retail website features that are currently offered by retail websites in the UK. Study 2 identified four online customer activities that customers perform during an online shopping transaction, and associated each retail website features with an online customer activity. Study 3 established a positive correlation between customer experience and repurchase intention. The principle component analysis has found that there are four types of retail website features in terms of the ways of influencing on customer experience and repurchase intention.

The next step is to find out the unique characteristics of these four types of retail website features, and develop an accurate description of each type. This chapter combines the findings from the above studies and analyses for a discussion, and aims to answer the main research question:

**Main Research Question**

What are the types of retail website features in terms of the way that they influence

customer experience and repurchase intention?

This chapter first provides a summary of the findings from the studies and analyses addressed in the previous chapters. Then, discusses and compares the retail website features of different types in the whole transaction and in each online customer activity. Therefore, this chapter proceeds under the following topics:

- Summary of Findings;
- Overview of Types of Retail Website Features;
- Types of Retail Website Features in Online Customer Activities.

## 12.2. Summary of Findings

In order to gain a general picture of the whole research and facilitate the discussions in this chapter, a table that summarises all the findings and analyses is presented (Table 12.1). This includes sixteen retained retail website features (see Table 11.48 on page 165 for full descriptions), four online customer activities, four underlying characteristics of retail website features, the mean value of each retail website feature's influences on customer experience and repurchase intention from both the student and customer samples.

| Retail Website Features | Online Customer Activities | Type | Students | | Customers | |
|---|---|---|---|---|---|---|
| | | | CE (mean) | RI (mean) | CE (mean) | RI (mean) |
| 1. keyword | Search | 1 | 3.25 | 3.06 | 3.80 | 3.65 |
| 2. category | Search | 1 | 3.31 | 3.09 | 3.75 | 3.66 |
| 4. suggest alternative | Search | 4 | 2.33 | 2.11 | 2.73 | 2.76 |
| 5. suggest additional | Search | 4 | 2.14 | 1.93 | 2.86 | 2.85 |
| 6. highlight offer | Search | 1 | 2.73 | 2.61 | 2.81 | 2.84 |
| 7. filter | Compare | 1 | 2.94 | 2.66 | 3.47 | 3.43 |
| 8. sort | Compare | 1 | 3.27 | 2.94 | 3.73 | 3.66 |
| 9. show number | Search | 1 | 2.54 | 2.14 | 3.54 | 3.47 |
| 10. compare | Compare | 1 | 1.89 | 1.86 | 2.67 | 2.80 |
| 11. save address | checkout & pay | 3 | 2.73 | 2.61 | 3.28 | 3.24 |
| 12. save payment | checkout & pay | 3 | 2.27 | 2.22 | 3.02 | 2.99 |
| 13. express checkout | checkout & pay | 3 | 2.17 | 2.01 | 2.91 | 2.97 |
| 15. pay offline | checkout & pay | 2 | 0.48 | 0.70 | 1.44 | 1.86 |
| 18. live chat | Enquire | 2 | 0.90 | 1.22 | 1.53 | 1.88 |
| 19. forum | Enquire | 2 | 0.75 | 0.90 | 1.34 | 1.68 |
| 20. ask offline | Enquire | 2 | 1.41 | 1.39 | 1.86 | 2.17 |

**Table 12.1 Summary of Findings**

## 12.3. Overview of Types of Retail Website Features

Table 12.2 presents an overview of the sixteen retail website features, which are sorted according to the mean values of their influences on customer experience and repurchase intention from the four data categories.

| | Retail Website Features | Sorted by Influences on Customer Experience | Type | Retail Website Features | Sorted by Influences on Repurchase Intention | Type |
|---|---|---|---|---|---|---|
| Student Data | 2. category | 3.31 | 1 | 2. category | 3.09 | 1 |
| | 8. sort | 3.27 | 1 | 1. keyword | 3.06 | 1 |
| | 1. keyword | 3.25 | 1 | 8. sort | 2.94 | 1 |
| | 7. filter | 2.94 | 1 | 7. filter | 2.66 | 1 |
| | 6. highlight offer | 2.73 | 1 | 6. highlight offer | 2.61 | 1 |
| | 11. save address | 2.73 | 3 | 11. save address | 2.61 | 3 |
| | 9. show number | 2.54 | 1 | 12. save payment | 2.22 | 3 |
| | 4. suggest alternative | 2.33 | 4 | 9. show number | 2.14 | 1 |
| | 12. save payment | 2.27 | 3 | 4. suggest alternative | 2.11 | 4 |
| | 13. express checkout | 2.17 | 3 | 13. express checkout | 2.01 | 3 |
| | 5. suggest additional | 2.14 | 4 | 5. suggest additional | 1.93 | 4 |
| | 10. compare | 1.89 | 1 | 10. compare | 1.86 | 1 |
| | 20. ask offline | 1.41 | 2 | 20. ask offline | 1.39 | 2 |
| | 18. live chat | 0.90 | 2 | 18. live chat | 1.22 | 2 |
| | 19. forum | 0.75 | 2 | 19. forum | 0.90 | 2 |
| | 15. pay offline | 0.48 | 2 | 15. pay offline | 0.70 | 2 |
| Customer Data | 1. keyword | 3.80 | 1 | 2. category | 3.66 | 1 |
| | 2. category | 3.75 | 1 | 8. sort | 3.66 | 1 |
| | 8. sort | 3.73 | 1 | 1. keyword | 3.65 | 1 |
| | 9. show number | 3.54 | 1 | 9. show number | 3.47 | 1 |
| | 7. filter | 3.47 | 1 | 7. filter | 3.43 | 1 |
| | 11. save address | 3.28 | 3 | 11. save address | 3.24 | 3 |
| | 12. save payment | 3.02 | 3 | 12. save payment | 2.99 | 3 |
| | 13. express checkout | 2.91 | 3 | 13. express checkout | 2.97 | 3 |
| | 5. suggest additional | 2.86 | 4 | 5. suggest additional | 2.85 | 4 |
| | 6. highlight offer | 2.81 | 1 | 6. highlight offer | 2.84 | 1 |
| | 4. suggest alternative | 2.73 | 4 | 10. compare | 2.80 | 1 |
| | 10. compare | 2.67 | 1 | 4. suggest alternative | 2.76 | 4 |
| | 20. ask offline | 1.86 | 2 | 20. ask offline | 2.17 | 2 |
| | 18. live chat | 1.53 | 2 | 18. live chat | 1.88 | 2 |
| | 15. pay offline | 1.44 | 2 | 15. pay offline | 1.86 | 2 |
| | 19. forum | 1.34 | 2 | 19. forum | 1.68 | 2 |

**Table 12.2 Sorted Retail Website Features**

Although the detailed rankings of each retail website feature are different in the four data categories, some consistencies between the data categories also exist. This shows that in all the four data categories, all the five retail website features that appear to have the most positive influences on customer experience and repurchase intention are Type 1 features (i.e. 1. keyword, 2. category, 6. highlight offer, 7. filter, and 8. sort), and all the four retail website features that appear to have the least positive influences on customer experience and repurchase intention are Type 2 features (i.e. 15. pay offline, 18. live chat, 19. forum, and 20. ask offline). The other seven retail website features of Type 1, 3 and 4 are blended in the middle of the rankings, where no clear pattern can be identified as to which type has a more or

less positive influence on customer experience and repurchase intention.

This seems to suggest that Type 1 features have more positive influences on customer experience and repurchase intention, as compared to Type 2, 3, and 4 features; Type 2 features have a less positive influence on customer experience and repurchase intention than Type 1, 3 and 4.

Regarding Factor 3 and 4 features, the customer data shows that Type 3 features have more positive influences on customer experience and repurchase intention than Type 4 features. However, the student data shows that there is no clear difference between Type 3 features and Type 4 features in terms of which type has more positive influences on customer experience and repurchase intention.

To summarise, Type 1 features appear to have the most positive influence on customer experience and repurchase intention, and Type 2 features appear to have the least positive influences on customer experience and repurchase intention. However, it cannot be determined whether Type 3 features and Type 4 features have a more positive influence on customer experience and repurchase intention.

## 12.4. Types of Retail Website Features in Online Customer Activities

In this section, the four types of retail website features are compared within each online customer activity, in order to better examine their different influences on customer experience and repurchase intention, and identify the basic characteristics of each type. Retail website features are sorted by their influences on customer experience and repurchase intention within their associated online customer activities.

### 12.4.1. Search

There are six retail website features associated with the Search activity (Table 12.3). Four of them are Type 1 features (1. keyword, 2. category, 6. highlight offer, and 9. suggest alternative) and two of them are Type 4 features (4. suggest alternative and 5. suggest additional).

| | Retail Website Features | Sorted by Influences on Customer Experience | Factor | Retail Website Features | Sorted by Influences on Repurchase Intention | Factor |
|---|---|---|---|---|---|---|
| **Student Data** | 2. category | 3.31 | 1 | 2. category | 3.09 | 1 |
| | 1. keyword | 3.25 | 1 | 1. keyword | 3.06 | 1 |
| | 6. highlight offer | 2.73 | 1 | 6. highlight offer | 2.61 | 1 |
| | 9. show number | 2.54 | 1 | 9. show number | 2.14 | 1 |
| | 4. suggest alternative | 2.33 | 4 | 4. suggest alternative | 2.11 | 4 |
| | 5. suggest additional | 2.14 | 4 | 5. suggest additional | 1.93 | 4 |
| **Customer Data** | 1. keyword | 3.80 | 1 | 2. category | 3.66 | 1 |
| | 2. category | 3.75 | 1 | 1. keyword | 3.65 | 1 |
| | 9. show number | 3.54 | 1 | 9. show number | 3.47 | 1 |
| | 5. suggest additional | 2.86 | 4 | 5. suggest additional | 2.85 | 4 |
| | 6. highlight offer | 2.81 | 1 | 6. highlight offer | 2.84 | 1 |
| | 4. suggest alternative | 2.73 | 4 | 4. suggest alternative | 2.76 | 4 |

**Table 12.3 Search**

The student data shows that all Type 1 features appear to have more positive influence on customer experience and repurchase intention than Type 4 features. In comparison, customer data shows a little difference from the student data. Although it appears that Type 1 features generally have a more positive influence on customer experience and repurchase intention, the Type 1 feature of 6. highlight appears to have a less positive influence on customer experience and repurchase intention than a Type 4 feature, 5. suggest additional. However, the differences in the mean values of their influences on customer experience and repurchase intention are very small (0.4 for influences on customer experience and 0.1 for influences on repurchase intention). Therefore, it may be concluded that Type 1 features generally have a more positive influence on customer experience and repurchase than Type 2 features.

Among the Type 1 features, two of them, 1. keyword and 2. category, appear to be the top two features, with the most positive influence on customer experience and repurchase intention. These two features are offered on all 60 retail websites investigated in Study 1. They also appear to be the necessary start point for a transaction on a retail website for a customer, and directly help people to locate a number of products with a certain criteria (e.g. keywords given or categories selected by customers). The other two Type 1 features, 6. highlight offer and 9. show

number are used to change the display of the product list, but do not directly help to identify a range of products. In comparison, the Type 4 features of 4. suggest alternative and 5. suggest additional tend to automatically display more products based on the information given by people.

The student sample and the customer sample seem to have different perceptions on whether 4. suggest alternative or 5. suggest additional has a more positive influence on customer experience and repurchase intention. The student sample seems to prefer to get more choice on the targeted product type (i.e. 4 suggest alternative), However, the customer sample seems to be more interested in accessories or other additional products to the selected one (i.e. suggest additional). This may be explained by the demographic differences between the two samples; however, they need to be further tested.

By comparing all Type 1 features and Type 4 features in the Search activity, it is found that their main differences are that Type 1 features require customers to initiate the actions to use them (e.g. enter keyword, or click on a category), but Type 4 feature are automatically activated by the website based on the information provided by the customers (e.g. product being selected or category being browsed).

In conclusion, Type 1 features need to be initiated by customers, and Type 4 features

are automatically activated by the website. Also, there appear to be two activity-related sub-types of Type 1 features in the Search activity, i.e. the one that directly contributes to the main purpose of the activity (identify a broad range of products), and the other facilitate the browsing by altering the display of products.

| Type | Positive Influences on CE & RI | Characteristic | Positive Influences on CE & RI | Sub-Type | Characteristic |
|---|---|---|---|---|---|
| 1 | More | initiated by customers | more | Search 1.1 | contribute to the main purpose of the activity |
| | | | less | Search 1.2 | facilitate the browsing |
| 4 | Less | automatically activated by websites | | | |

**Table 12.4 Types of Retail Website Features in Search**

### 12.4.2. Compare

In the online customer activity of Compare, all the three associated retail website features are Type 1 (Table 12.5). Hence, the comparison between the different types of retail website features is impossible within this activity. However, it appears that these three Type 1 features match the characteristic of Type 1 features identified in the Search activity, which is customer-initiated.

| | Retail Website Features | Sorted by Influences on Customer Experience | Factor | Retail Website Features | Sorted by Influences on Repurchase Intention | Factor |
|---|---|---|---|---|---|---|
| **Student Data** | 8. sort | 3.27 | 1 | 8. sort | 2.94 | 1 |
| | 7. filter | 2.94 | 1 | 7. filter | 2.66 | 1 |
| | 10. compare | 1.89 | 1 | 10. compare | 1.86 | 1 |
| **Customer Data** | 8. sort | 3.73 | 1 | 8. sort | 3.66 | 1 |
| | 7. filter | 3.47 | 1 | 7. filter | 3.43 | 1 |
| | 10. compare | 2.67 | 1 | 10. compare | 2.80 | 1 |

**Table 12.5 Compare**

The four data categories suggest the identical ranking of the three retail website features in terms of their influences on customer experience and repurchase intention. Among these three retail website features, 8. (sort) appears to be the one that has the most positive influence on customer experience and repurchase intention; 7. (filter) appears to have a less positive influence on customer experience and repurchase intention, and 10. (compare) appears to have the least positive influence on customer experience and repurchase intention.

This also shows that the differences between 8. sort and 7. filter are relatively smaller than the difference between 7. filter and 10. compare. One possible reason for this may be that 7. filter and 8. sort are features that help to process a large number or all of the products on a retail website, but 10. compare usually can only process several products at a time. This may indicate that the more products a feature can process, the more positive influence it has on customer experience and repurchase intention.

Therefore, another two activity-related sub-types of Type 1 features are identified, i.e. one that processes larger number of products, and the other processes smaller number of products (Table 12.6).

| Type | Positive Influences on CE & RI | Characteristic | Positive Influences on CE & RI | Sub-Type | Characteristic |
|---|---|---|---|---|---|
| 1 | - | initiated by customers | more | Compare 1.1 | process large number of products |
| | | | less | Compare 1.2 | process small number of products |

**Table 12.6 Types of Retail Website Features in Compare**

### 12.4.3. Checkout

In the Checkout activity, there are three Type 3 features (11. save address, 12. save payment, 13. express checkout) and one Type 2 feature (15. pay offline) (Table 12.7).

| | Retail Website Features | Sorted by Influences on Customer Experience | Factor | Retail Website Features | Sorted by Influences on Repurchase Intention | Factor |
|---|---|---|---|---|---|---|
| **Student Data** | 11. save address | 2.73 | 3 | 11. save address | 2.61 | 3 |
| | 12. save payment | 2.27 | 3 | 12. save payment | 2.22 | 3 |
| | 13. express checkout | 2.17 | 3 | 13. express checkout | 2.01 | 3 |
| | 15. pay offline | 0.48 | 2 | 15. pay offline | 0.70 | 2 |
| **Customer Data** | 11. save address | 3.28 | 3 | 11. save address | 3.24 | 3 |
| | 12. save payment | 3.02 | 3 | 12. save payment | 2.99 | 3 |
| | 13. express checkout | 2.91 | 3 | 13. express checkout | 2.97 | 3 |
| | 15. pay offline | 1.44 | 2 | 15. pay offline | 1.86 | 2 |

**Table 12.7 Checkout**

Both student data and customer data show the same ranking of retail website features in terms of their influences on customer experience and repurchase intention. This shows that the three Type 3 features have significantly more positive influences on customer experience and repurchase intention than the Type 2 feature.

It seems that both Type 2 and 3 features require customers to give the same information for delivery and payment. The differences are that with Type 2 feature (i.e. 15. pay offline), customers usually need to make some sort of offline interaction with a real person, and may need to give the same information again in every future transaction. However, Type 3 features are usually completed on the website by the customer (with no need to interact with a real person), and the information provided may be saved for future use, so that there is no need to repeat the process.

Among the three Type 3 features, 11. save address appears to have the most positive influences on customer experience and repurchase intention, 12. save payment appears to have less positive influence and 13. express checkout appears to have the least positive influences. It is also noticed that the differences between the mean value of 11. save address and 12. save payment are always larger than the differences between 12. save payment and 13. express checkout. This may indicate that 12. save payment and 13. express checkout may be categorised as a sub-type by some characteristics that different from 11. save address. In fact, in order to be able to use 13. express checkout, customers are usually required to save both address information and payment information on the website, i.e. 13. express checkout includes the characteristics of both 11. save address and 12. save payment. The smaller differences between 12. save payment and 13. express checkout may suggest that whether or not to save payment details is critical to the a retail website

feature's influences on customer experience and repurchase intention, which may be related to the security concerns of online shopping.

Therefore, in the Checkout activity, Type 2 features require offline interaction with a real person, and Type 3 features allow customers to use them on the website and provide the option to save address and/or payment details on the website for future use. In addition, two activity-related sub-types of Type 3 are identified, i.e. one that saves payment information, and the other that does not save payment information (Table 12.8).

| Type | Positive Influences on CE & RI | Characteristic | Positive Influences on CE & RI | Sub-Type | Characteristic |
|---|---|---|---|---|---|
| 3 | More | online with option to save details | More | Checkout 3.1 | does not save payment information |
| | | | Less | Checkout 3.2 | saves payment information |
| 2 | Less | offline interaction with a real person | | | |

**Table 12.8 Types of Retail Website Features in Checkout**

### 12.4.4. Enquire

In the Enquire activity, there are three features (18. live chat, 19, forum and 20. ask offline,), all of which are Type 2 features (Table 12.9). All the four data categories rank these retail website features in the same order by their influences on customer experience and repurchase intention. It appears that 20. ask offline has the most positive influences on customer experience and repurchase intention, 18. live chat has less positive influence and 19 forum has the least positive influences.

| | Retail Website Features | Sorted by Influences on Customer Experience | Type | Retail Website Features | Sorted by Influences on Repurchase Intention | Type |
|---|---|---|---|---|---|---|
| Student Data | 20. ask offline | 1.41 | 2 | 20. ask offline | 1.39 | 2 |
| | 18. live chat | 0.90 | 2 | 18. live chat | 1.22 | 2 |
| | 19. forum | 0.75 | 2 | 19. forum | 0.90 | 2 |
| Customer Data | 20. ask offline | 1.86 | 2 | 20. ask offline | 2.17 | 2 |
| | 18. live chat | 1.53 | 2 | 18. live chat | 1.88 | 2 |
| | 19. forum | 1.34 | 2 | 19. forum | 1.68 | 2 |

**Table 12.9 Enquire**

All these three features require interactions with a real person. However, two of these Type 2 features involve interactions with real person on the website. Therefore, the characteristic of Type 2 features identified in the Checkout activity need to be altered to interaction with real person, instead of offline interaction with real person.

There appear to be two ways of sub-typing these three Type 2 features. One is by the time required for a responses. It seems that by using 20. ask offline and 18. live chat, customers are more likely to get an instant answer or response to their enquiry. In contrast, 19. forum usually requests some more time to provide a response, which may or may not be the official explanation to the customer's enquiry. The other way of sub-typing concerns whether the customer interact with a real person over the internet or not. Feature 20. ask offline requires offline interaction with a real person, but 18. live chat and 19. forum usually require interaction over the internet. However, by comparing the mean value of these three retail website features' influences on customer experience and repurchase intention, it appear that the difference between 20. ask offline and 18. live chat is larger than the differences between 18.

live chat and 19. forum, which seems to suggest that feature 18. live chat and 19. forum should belong to the same sub-type. Therefore, two activity-related sub-types of Type 2 features in the Enquire activity are identified, i.e. one that involves offline interaction and the other involves online interaction with a real person (Table 12.10).

| Type | Positive Influences on CE & RI | Characteristic | Positive Influences on CE & RI | Sub-Type | Characteristic |
|---|---|---|---|---|---|
| 2 | - | interaction with a real person | more | Enquire 2.1 | offline interaction |
| | | | less | Enquire 2.2 | online interaction |

**Table 12.10 Types of Retail Website Features in Enquire**

## 12.1. Conclusion

The characteristic of each type of retail website features are identified and initially described as below:

- Type 1: need to be initiated by customers
- Type 2: involve interaction with a real person
- Type 3: provide options to save details online
- Type 4: automatically activated by the website

In Type 1, “need to be initiated by customers” also means that the customers have the option of whether or not to use a feature. In Type 3, the save details are usually automatically used in the future transactions. This suggests that “provide options to save details online” also means automatic features, with the option to use or not. Therefore, the four types of retail website features can also be described as:

- Type 1: provide the options of whether or not to use a feature
- Type 2: involve interaction with a real person
- Type 3: automatic features with the option of whether or not to use it
- Type 4: automatic features activated by the website

i.e.

- Type 1: optional non-automatic features
- Type 2: features with real person interactions
- Type 3: optional automatic features
- Type 4: non-optional automatic features

As the findings of section 12.3 suggest, Type 1 features have the most positive influences on customer experience and repurchase intention, Type 2 features have the least positive influences among the four types of retail website features, and it is not clear enough to determine whether Type 3 features or Type 4 features have more positive influences on customer experience and repurchase intention, it is possible to conclude that optional non-automatic features (Type 1 features) has the most positive influences on customer experience and repurchase intention, over automatic features (Type 3 and 4 features), and over features with real person interactions (Type 2 features).

# 13. Conclusion

## 13.1. Introduction

The previous chapters reviewed the relevant literature, proposed research questions, justified the research methodologies, collected empirical data and performed the necessary analysis. This chapter concludes this research, and addresses the following issues:

- Answers to Research Questions;
- Theoretical Contributions
- Practical Implications
- Opportunities for Future Research

## 13.2. Answers to Research Questions

**Main Research Question**

What are the types of retail website features in terms of how they I influence customer experience and repurchase intention?

There appear to be four types of retail website features in terms of the way of influencing customer experience and repurchase intention. Type 1 includes the optional features of the retail websites, where customers may have the choice to

decide whether or not to use the features. It appears to have the most positive influences on customer experience and repurchase intention.

Type 2 means features with real person interaction, which customers may use to interact with customer service personnel through online or offline channels. This type of retail website features appears to have the least positive influence on customer experience and repurchase intention.

Type 3 denotes the optional automatic features, which mainly refer to the automatic use of pre-saved information.

Type 4 involves the automatic features, which are activated automatically by the website, and are out of the control of customers.

This research did not provide clear evidence as to whether Type 3 features or Type 4 features have more positive influences on customer experiences and repurchase intention. However, both of these two types of retail website features are concerned with automatic features, which may be activated either by customers or websites.

**Sub Research Question 1**

What features are offered on retail websites?

Twenty retail website features were identified, as listed in Table 13.1.

| Name | Description of Retail Website Features | Total | % |
|---|---|---|---|
| 1. keyword | The website enables you to search for products with key words or catalogue numbers. | 60 | 100% |
| 2. category | The website enables you to browse products in detailed categories/departments. | 60 | 100% |
| 3. interactive | The website provides interactive functions (auto drop-down list of categories, suggestions of key words when typing in search box, auto zoom in/out when mouse over pictures, etc.). | 50 | 83% |
| 4. suggest alternative | The website automatically suggests alternative products (which you may buy instead of the one you are browsing). | 27 | 45% |
| 5. suggest additional | The website automatically suggests additional products (such as similar style products or accessories which you may buy together with the one you are browsing). | 39 | 65% |
| 6. highlight offer | The website highlights products on special offers. | 43 | 72% |
| 7. filter | The website enables you to filter / select a list of products by pre-set attributes (brand, colour, size, etc.). | 51 | 85% |
| 8. sort | The website enables you to sort a list of products into order (by price, by popularity, by relevance, etc.). | 52 | 87% |
| 9. show number | The website enables you to choose how many products to show on one page (20, 50, all, etc.). | 31 | 52% |
| 10. compare | The website enables you to compare the detailed specifications of selected products on one page. | 15 | 25% |
| 11. save address | The website enables you to save your address details with your account. | 52 | 87% |
| 12. save payment | The website enables you to save your payment details (credit / debit card, PayPal account, etc.). | 25 | 42% |
| 13. express checkout | The website enables you to make one-click / express payments using your saved address and payment details. | 2 | 3% |
| 14. 3rd party checkout | The website provides you an option to make payment through a website that is not operated by your bank (PayPal, Google Checkout, NoChex, etc.). | 2 | 3% |
| 15. pay offline | The website accepts payments by telephone, post, at local stores, or through any other offline channels. | 13 | 22% |
| 16. FAQs | The website provides information sections (FAQs, Help, etc.) for you to find quick answers to questions. | 60 | 100% |
| 17. email/form | The website enables you to make enquiries by email or filling an online enquiry form. | 48 | 80% |
| 18. live chat | The website enables you to make enquiry by live chat (via typing) with customer service agents. | 3 | 5% |
| 19. forum | The website provides an online forum where you can discuss (via typing) relevant issues with customer service agents as well as other customers. | 2 | 3% |
| 20. ask offline | The website accepts enquiries by telephone, post, at local stores, or through any other offline channels. | 51 | 85% |

**Table 13.1 Answer to Sub Research Question 1**

The results also show that ten of the twenty retail website features are offered on more than two thirds of the investigated retail websites (40 out of 60), which suggests that online retail service providers offer similar features on their retail

websites.

**Sub Research Question 2**

What activities do customers perform on retail websites?

It was found that customers of retail websites perform four activities, i.e. Search, Compare, Checkout, and Enquiry. In the Search activity, customers' main purpose is to identify a broad range of products for further selection. In the activity of Compare, customers compare the details of products in the identified range and make decisions as to which product to purchase. At Checkout, delivery and payment information is processed, including account details, shipping and billing addresses, credit card numbers etc. Another activity is Enquire, where customers try to find answers to their questions. It may be worth noting that although the first three online customer activities appear to be in a sequence, customers are free to jump to any activities at any point in a transaction.

**Sub Research Question 3**

What is the relationship between customer experiences and repurchase intention?

Based on the results of an online questionnaire, a positive correlation between

customer experience and repurchase intention has been identified. This confirms the importance of customer experience, as it has the potential to bring better financial performance to service providers. It may encourage service providers to develop their services with enhanced customer experience as a competitive advantage.

## 13.3. Theoretical Contributions

This research contributes to theory from five perspectives:

- In the existing literature, e-Service was usually perceived and evaluated as a whole process. In other words, it was assumed that customers' demand for every part of an e-service should be assessed by the same criteria. This research explored online retail services according to the individual features that the service providers offer to their customers on their retail websites. The features were analysed in the context of their associated activity that customers perform to achieve different goals. It investigated the service as a set of parts and provided a new way of analysing e-service processes. This approach to service exploration may also be applied to other service areas;
- As other researchers proposed that e-service design should be based on customer experience, however, little suggestion was provided as to how to accomplish the task. This research attempted to identify the patterns of how retail website features influence customer experience. It has identified four types of retail website features in terms of the means of influencing customer

experience and repurchase intention. It is found that optional non-automatic features on a retail website may result in more positive influences on customer experience and repurchase intention than automatic features, and features with real person interaction;

- Little evidence was found in the current body of knowledge as to what activities customers undertake on a retail website. This research has found that customers perceive an online retail transaction as a combination of four activities: search, compare, checkout and enquire. Hence, it suggests that customers may have different needs during different parts of a transaction, which could become a focus for e-service design;
- In addition to the findings of other researchers, which suggest good customer experience may bring varies benefits to service organisations. This research has demonstrated a correlation between the customer experience and repurchase intention, which confirms the importance of providing an excellent customer experience;
- The previous research focused more on the organisational side of e-service. This research refocused to the part of e-service where the customers interact with the service providers. It has proposed a framework of retail website features, online customer activities, customer experience, and repurchases intentions. This will enable and may inspire future research in experience-based service design in e-services.

## 13.4. Practical Implications

This research has three major implications for practice:

- This research provided further evidences to show the correlation between customer experience and repurchase intention, and may provide an incentive for service organisations to provide a better customer experience;
- This research demonstrated a means of linking retail website features, customer experience, and repurchase intention. It enables e-service organisations to design their websites to deliver a better customer experience;
- More importantly, this research has identified four types of retail website features in terms of their approach to influencing customer experience and repurchase intention. It may be used as a guideline for designing new features of retail websites.

## 13.5. Research Limitations

This research has a number of limitations and flaws that restrict any generalization of the results.

The identification of retail website features was based on the researcher's perceptions of a small proportion of retail websites. On one hand, the researcher

may have missed some or many of the features offered on those sites. On the other hand, although these are some of the most popular sites in the UK, there may be other features offered on other websites. Thus, if the research is conducted by another person or based on other websites, the results may differ.

The online customer activities were identified from interviews with 52 university students, and summarised by the researcher. Although similar results were concluded by other colleagues and online shoppers, based on the interview data, different perceptions may exist and different result may be produced.

Online questionnaire invitations were only sent to students at one university. The generalizability of questionnaire results to a wider population thus cannot be confidently claimed.

The research data was collected at a certain time frame (2008-2010). Given the fast development of technology, the online retail industry and online customers' perceptions may change significantly in a relatively short time. Thus the findings of this research may be limited to the point of this study.

## 13.6. Opportunities for Future Research

The opportunities for future research are proposed from three perspectives:

- Filling the gaps identified in the literature review
- Testing the Findings of This Research
- Engaging with Service Providers and Service Designers

### 13.6.1. Filling the gaps identified in the literature review

The literature review revealed several gaps in the existing literature. However, this research has only covered four of them. The rest are listed below as opportunities for future research:

**Nature of e-Service:**

- In the Zeithaml *et al.* (2002)'s model, it appears that many current studies are concerned with the information gap between customers and service providers, and little attention has been paid to the design and communication gap, both of which are in the operations management area.
- In comparison, the Voss (2003) model provided a more practical guideline as to the value of service; however, the three levels of service are not very well differentiated by researchers.

**e-Service Design:**

- The literature review identified four main themes of e-service process design: information, interaction, audio and visual features, and function features.

However, these themes may not cover all areas of e-service.

**Customer Experience in e-Service:**

- Much of the existing literature in e-service attempted to identify the determinants of customer experience. However, there appears to be little on what customer experience can bring to service providers in the e-service context.

**Customer Experience – What**

- Although the conceptual framework proposed by O'Loughlin *et al.* (2004) shows a clear structure of customer experience, it also leads researcher to several unanswered questions: How are the three levels of customer experience related? How do they influence each other? Is brand experience simply an accumulation of transactional experience? What is the role of the relationship experience? What is the different between relationship experience and loyalty?

**Customer Experience – When**

- It appears that the current literature has formed a clear structure of the phases of service experience. However, the number of studies on these topics is relatively small. Many opportunities for future research exist, such as

how the experience in difference phases influence each other, what kind of service is more likely to produce high or low peak of experience.

**Customer Experience – How**

- Most current studies assume that designed experiences will be delivered successfully. However, little attention has been paid to the impact of service failure and recovery service on customer experience.

### 13.6.2. Testing the Findings of This Research

Given the limitation of the samples used, many aspects need to be further tested.

**Retail Website Features**

This research identified only 20 retail website features through the investigation of 60 most popular retail websites in the UK. There are very likely to be some less popular but more innovative retail websites in the UK or other parts of the world. The inclusion of more retail websites and more retail website features in the research will definitely increase the range and the reliability of the types of retail website features.

**Online Customer Activities**

Four main online customer activities were categorised from the statements of 52

university students. Although data saturation was the reason for having a small sample size, it would be interesting to see how other people perceive this issue. Students from one UK university is a very limited and restricted sample frame that may not be representative to the general online shopping population. Two directions for future research are proposed. One is to include more people from a large variety of demographic backgrounds to increase the generalizability of the results. The other is to target a special segment of consumers, for example customers of a particular type of retail website, to see if the activities are perceived differently.

**Relationship between Customer Experience and Repurchase Intentions**

The research opportunity for this part is similar to online customer activities. More general samples and more specific sample should be used to test the results of this research, as well as to explore differences in findings.

**Types of Retail Website Features**

Following using different samples in the above studies, the result produced from principle component analysis may be different. More types of retail website features may be revealed when the number of retail website features increases by investigating more retail websites. Perceptions from other samples on retail website features' influences on customer experience and repurchase intention may also produce types of retail website features using different dimensions.

### 13.6.3. Engaging with Service Providers and Service Designers

Another opportunity for future research in this area is to bring the findings of this research to the practitioners, i.e. service providers and service designers. After all, the purpose of this research is to explore how customer experience may be used to contribute to e-service design. This research has produced a theoretical foundation from empirical data. However, whether these theories can be effectively used in the industry becomes the next important question to answer.

## 13.7. Conclusion

In conclusion, this research has identified several gaps in the relevant literature, and has filled four of them by applying a proposed framework for analysing online retail services. Empirical data were collected from retail websites and university students, as well as customers of an online retailer, based on carefully designed and justified research methods. This research has identified twenty retail website features and four online customer activities, and has established a positive correlation between customer experience and repurchase intention. It has, further, discovered four types of retail website features in terms of their ways of influencing customer experience and repurchase intention. The purpose of this research has been to enable and inspire customer experience-based design in e-services. It has deepened our

understanding of customer experience, and has provided a foundation and motivation to improve customer experience. However, future research is needed to confirm the findings of this research and to move forward.

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# Appendix A. List of Websites

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|---|---|---|---|
| 1 | www.amazon.co.uk | 31 | www.ikea.com |
| 2 | www.argos.co.uk | 32 | www.hp.com |
| 3 | www.play.com | 33 | www.boots.com |
| 4 | www.amazon.com | 34 | www.halfords.com |
| 5 | www.tesco.com | 35 | direct.asda.com |
| 6 | www.marksandspencer.com | 36 | www.maplin.co.uk |
| 7 | www.epson.co.uk | 37 | www.dorothyperkins.co.uk |
| 8 | www.next.co.uk | 38 | www.wickes.co.uk |
| 9 | www.asos.com | 39 | www.mandmdirect.com |
| 10 | euro.dell.com | 40 | www.apple.com/itunes |
| 11 | direct.tesco.com | 41 | www.toysrus.co.uk |
| 12 | www.diy.com | 42 | www.mothercare.com |
| 13 | www.apple.com | 43 | www.monsoon.co.uk |
| 14 | www.hmv.com | 44 | www.opticalexpress.co.uk |
| 15 | www.sainsburys.co.uk | 45 | www.lauraashley.com |
| 16 | www.topshop.com | 46 | www.dixons.co.uk |
| 17 | www.asda.co.uk | 47 | www.houseoffraser.co.uk |
| 18 | www.riverisland.com | 48 | www.missselfridge.co.uk |
| 19 | www.ebuyer.com | 49 | www.additionsdirect.co.uk |
| 20 | www.debenhams.com | 50 | www.topman.co.uk |
| 21 | www.johnlewis.com | 51 | www.focusdiy.co.uk |
| 22 | www.currys.co.uk | 52 | www.lego.com |
| 23 | www.lovefilm.com | 53 | www.jdsports.co.uk |
| 24 | www.comet.co.uk | 54 | www.wilkinsonplus.com |
| 25 | www.screwfix.com | 55 | www.sportsdirect.com |
| 26 | www.game.co.uk | 56 | www.boden.co.uk |
| 27 | www.homebase.co.uk | 57 | www.republic.co.uk |
| 28 | www.pcworld.co.uk | 58 | www.pixmania.co.uk |
| 29 | www.newlook.co.uk | 59 | www.chainreactioncycles.com |
| 30 | www.qvcuk.com | 60 | www.wiggle.co.uk |

# Appendix B. Interview Procedure and Questions

**Intro**

Thank you very much for coming! My name is Xiangyu. This research project focuses on exploring online shopping experiences and how it is influenced by retail websites. I would like you to tell me some of your own online shopping experiences. Do you mind if I record this conversation? It will be used only for data analysis. It will be kept anonymous and confidential.

May I ask for some background information of yourself, such as age, subject, year of study, where you are from, etc.?

What kind of stuff do you usually buy from online shops? What kind you won't buy online?

How often do you make an online purchase?

**Identify Online Customer Activities (or Key Stages)**

May I ask what the last thing you bought online was? When was that?

Where did you start from, I mean on the Internet, not on any particular website? What's next? Do you mind showing me on this computer?

What do you think are the key stages for this transaction? Were there any other activities you did during this transaction?

Now, would you please buy me a lamp, for no more than £30? without making payment, please.

What do you think are the key stages of this transaction? Any other

activities?

Have you performed any other activities that were not involved in these two transactions?

Ok, that’s all for today. Thank you very much for coming!

# Appendix C. Interview Recording Sheet

**Recording Form**

Date Time

Age Subject

Year of Study (Culture / Traditions)

Actions 1

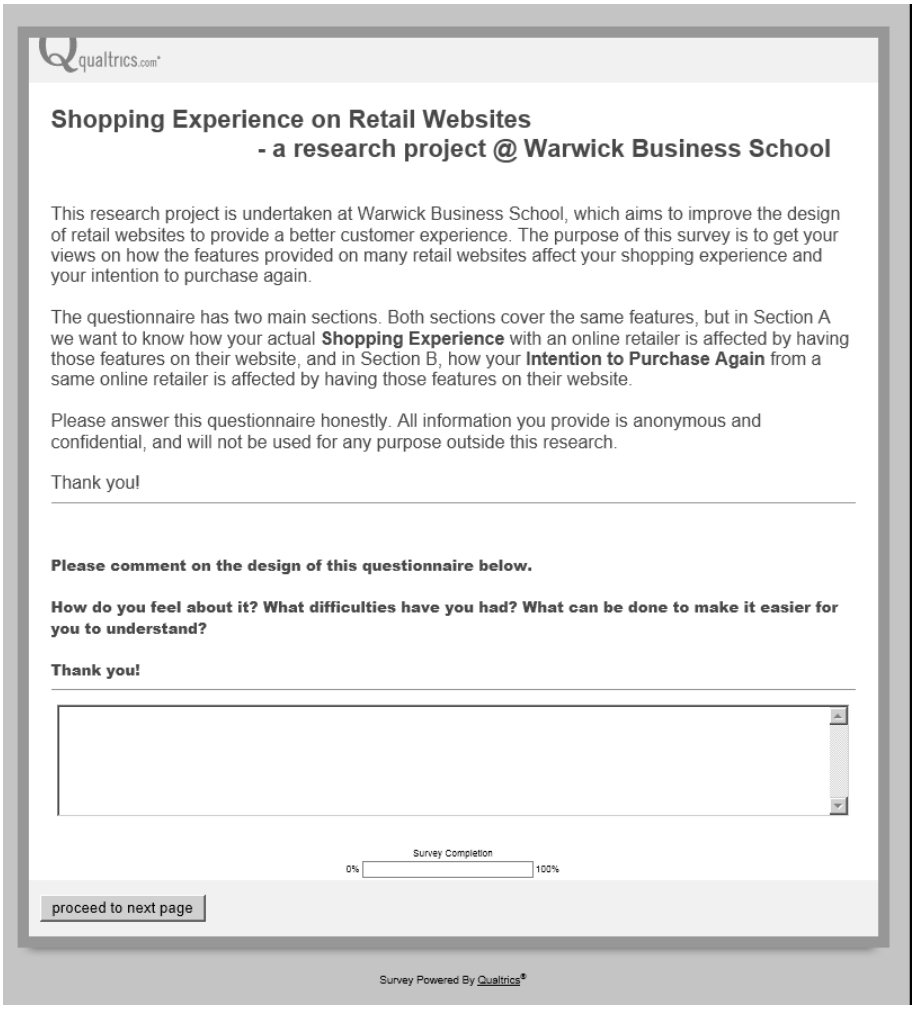
Actions 2

Activities 1

Activities 2

Other Actions / Activities

# Appendix D. Online Questionnaire for Pilot Study



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## Section A

**How is your actual Shopping Experience with an online retailer affected by having each of the following features on their website?**

**Shopping Experience** -- Your overall emotional feeling about a retailer when shopping with it.

Please pick a number on a 11-point scale, where:
**-5** = This feature **Strongly Detracts From** my actual shopping experience with an online retailer (i.e. make it worse).
**0** = This feature **Does Not Affect** my actual shopping experience with an online retailer.
**+5** = This feature **Strongly Enhances** my actual shopping experience with an online retailer (i.e. make it better).

| | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Enables you to search for products with key words or catalogue numbers | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2. Enables you to browse products in detailed categories/departments | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3. Has interactive functions (e.g. auto drop down list of categories, suggestions of keywords when typing in search box, auto zoom in/out when mouse over pictures) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4. Suggests alternative products (which you may buy instead of the one you are browsing) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 5. Suggests accessories of products (which you may buy together with the one you are browsing) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 6. Highlights products on special offer | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 7. Enables you to filter/select a list of products by pre-set attributes (e.g. brand, colour, size, etc.) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 8. Enables you to sort a list of products into order (e.g. by price, by popularity, by relevance, etc.) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 9. Enables you to choose how many products to show on one page (e.g. 20, 50, all, etc.) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 10. Enables you to list the detailed specifications of a few selected products for comparison (usually available with technical products, e.g. laptops, digital cameras, etc.) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 11. Enables you to save your address details with your account | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 12. Enables you save your payment details (e.g. credit/debit card, PayPal account, etc.) with your account | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 13. Enables you to make one-click/express payments using your saved address and payment details | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 14. Directs you to third-party websites (e.g. PayPal, Google Checkout, WorldPay, NoChex, etc.) to make payments | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 15. Accepts payments by telephone, post, at local stores, or through any other offline channels | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 16. Provides FAQs (Frequently Asked Questions) sections for you to find quick answers to your enquiries | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 17. Enables you to make enquiries by email or by filling an online enquiry form | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 18. Enables you to perform a live chat with customer service agents through instant messenger services | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 19. Provides an online forum where you can discuss relevant issues with customer service agents as well as other customers | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 20. Accepts enquiries by telephone, post, at local stores, or through any other offline channels | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**Please comment on the design of this questionnaire below.**

**How do you feel about it? What difficulties have you had? What can be done to make it easier for you to understand?**

**Thank you!**

Survey Completion
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## Section B

**How is your Intention to Purchase Again from a same online retailer affected by having each of the following features on their website?**

**Intention to Purchase Again** -- Your willingness to visit a retailer and purchase again from them in the future.

Please pick a number on a 11-point scale, where:
**-5** = This feature **Strongly Discourages** me to purchase again from a same online retailer.
**0** = This feature **Does Not Affect** my intention to purchase again from a same online retailer.
**+5** = This feature **Strongly Encourages** me to purchase again from a same online retailer.

| | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Enables you to search for products with key words or catalogue numbers | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2. Enables you to browse products in detailed categories/departments | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3. Has interactive functions (e.g. auto drop down list of categories, suggestions of keywords when typing in search box, auto zoom in/out when mouse over pictures) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4. Suggests alternative products (which you may buy instead of the one you are browsing) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 5. Suggests accessories of products (which you may buy together with the one you are browsing) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 6. Highlights products on special offer | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 7. Enables you to filter/select a list of products by pre-set attributes (e.g. brand, colour, size, etc.) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
| 8. Enables you to sort a list of products into order (e.g. by price, by popularity, by relevance, etc.) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 9. Enables you to choose how many products to show on one page (e.g. 20, 50, all, etc.) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 10. Enables you to list the detailed specifications of a few selected products for comparison (usually available with technical products, e.g. laptops, digital cameras, etc.) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 11. Enables you to save your address details with your account | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 12. Enables you save your payment details (e.g. credit/debit card, PayPal account, etc.) with your account | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 13. Enables you to make one-click/express payments using your saved address and payment details | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 14. Directs you to third-party websites (e.g. PayPal, Google Checkout, WorldPay, NoChex, etc.) to make payments | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
| 15. Accepts payments by telephone, post, at local stores, or through any other offline channels | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 16. Provides FAQs (Frequently Asked Questions) sections for you to find quick answers to your enquiries | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 17. Enables you to make enquiries by email or by filling an online enquiry form | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 18. Enables you to perform a live chat with customer service agents through instant messenger services | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 19. Provides an online forum where you can discuss relevant issues with customer service agents as well as other customers | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 20. Accepts enquiries by telephone, post, at local stores, or through any other offline channels | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**Please comment on the design of this questionnaire below.**

**How do you feel about it? What difficulties have you had? What can be done to make it easier for you to understand?**

**Thank you!**

Survey Completion
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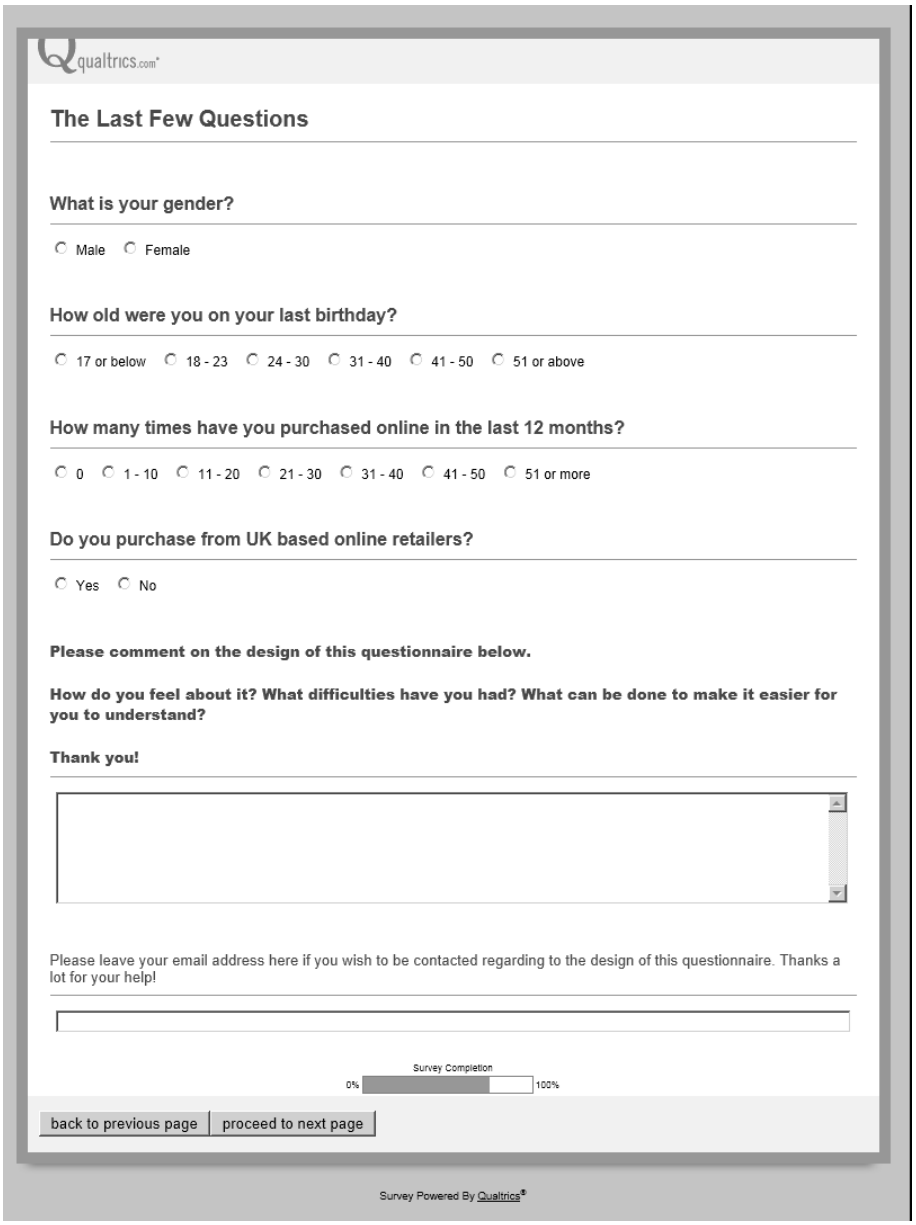
Qualtrics.com
The Last Few Questions
What is your gender?
Male
Female
How old were you on your last birthday?
17 or below
18 - 23
24 - 30
31 - 40
41 - 50
51 or above
How many times have you purchased online in the last 12 months?
0
1 - 10
11 - 20
21 - 30
31 - 40
41 - 50
51 or more
Do you purchase from UK based online retailers?
Yes
No
Please comment on the design of this questionnaire below.
How do you feel about it? What difficulties have you had? What can be done to make it easier for you to understand?
Thank you!
Please leave your email address here if you wish to be contacted regarding to the design of this questionnaire. Thanks a lot for your help!
Survey Completion
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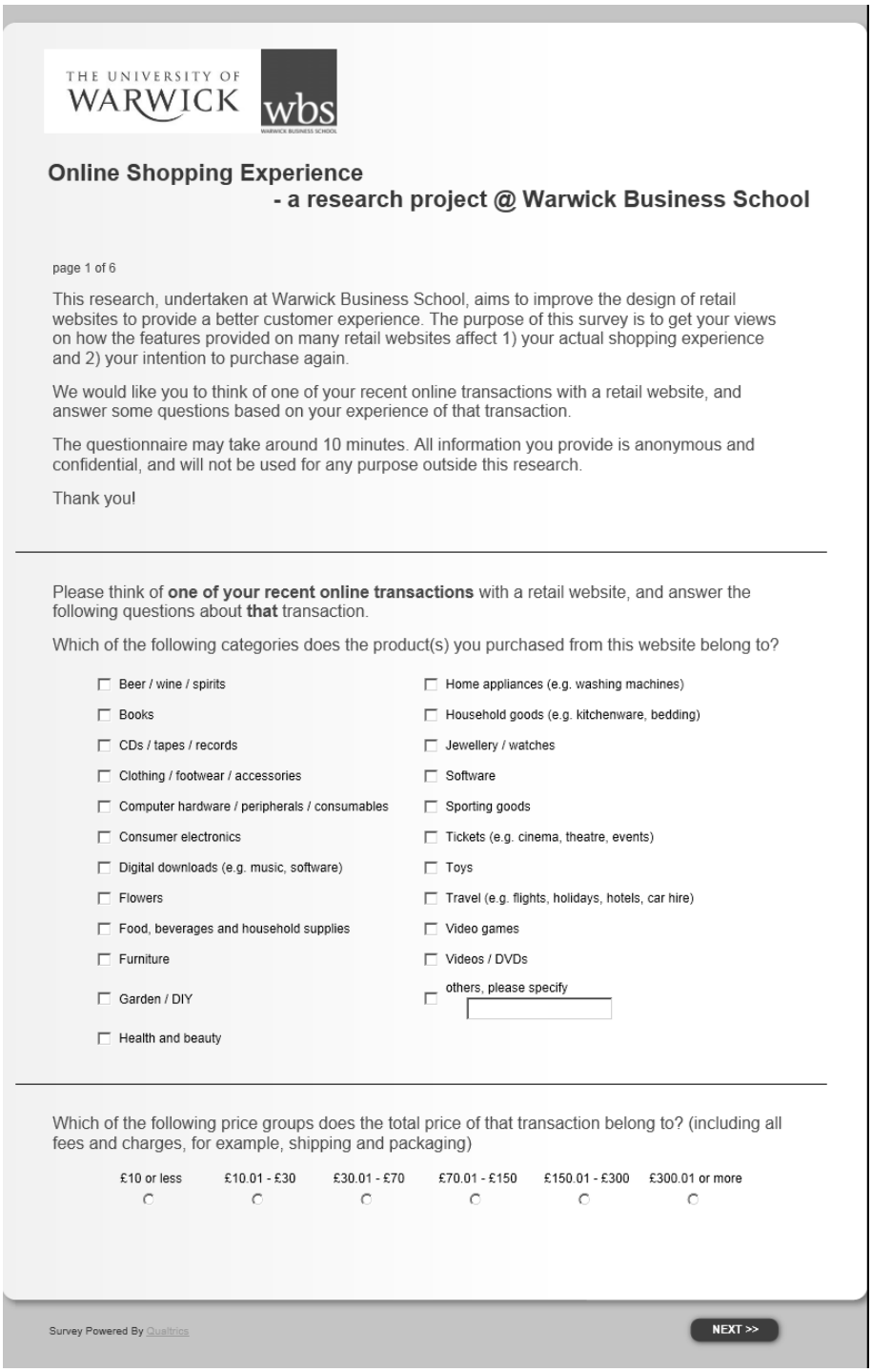
# Appendix E. Online Questionnaire for Main Study



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**Online Shopping Experience**
**- a research project @ Warwick Business School**

page 1 of 6

This research, undertaken at Warwick Business School, aims to improve the design of retail websites to provide a better customer experience. The purpose of this survey is to get your views on how the features provided on many retail websites affect 1) your actual shopping experience and 2) your intention to purchase again.

We would like you to think of one of your recent online transactions with a retail website, and answer some questions based on your experience of that transaction.

The questionnaire may take around 10 minutes. All information you provide is anonymous and confidential, and will not be used for any purpose outside this research.

Thank you!

---

Please think of **one of your recent online transactions** with a retail website, and answer the following questions about **that** transaction.

Which of the following categories does the product(s) you purchased from this website belong to?

- ☐ Beer / wine / spirits
- ☐ Books
- ☐ CDs / tapes / records
- ☐ Clothing / footwear / accessories
- ☐ Computer hardware / peripherals / consumables
- ☐ Consumer electronics
- ☐ Digital downloads (e.g. music, software)
- ☐ Flowers
- ☐ Food, beverages and household supplies
- ☐ Furniture
- ☐ Garden / DIY
- ☐ Health and beauty
- ☐ Home appliances (e.g. washing machines)
- ☐ Household goods (e.g. kitchenware, bedding)
- ☐ Jewellery / watches
- ☐ Software
- ☐ Sporting goods
- ☐ Tickets (e.g. cinema, theatre, events)
- ☐ Toys
- ☐ Travel (e.g. flights, holidays, hotels, car hire)
- ☐ Video games
- ☐ Videos / DVDs
- ☐ others, please specify

---

Which of the following price groups does the total price of that transaction belong to? (including all fees and charges, for example, shipping and packaging)

| £10 or less | £10.01 - £30 | £30.01 - £70 | £70.01 - £150 | £150.01 - £300 | £300.01 or more |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

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## Online Shopping Experience
## - a research project @ Warwick Business School



**Based on that particular transaction**, please pick a number on the 11-point scales to indicate how each of the following website features affected your **actual shopping experience** with this retail website and your **intention to purchase again** from this retail website.

On the 11-point scales,

-5 = This feature **strongly detracted from** my actual shopping experience with this retail website, or
This feature **strongly discouraged** me to purchase again from this retail website.

0 = This feature **did not affect** my actual shopping experience or my intention to purchase again.

+5 = This feature **strongly enhanced** my actual shopping experience with this retail website, or
This feature **strongly encouraged** me to purchase again from this retail website.

You may choose "**not applicable**" if the website did not provide the feature.

---

1. The website enables you to search for products with key words or catalogue numbers.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

---

2. The website enables you to browse products in detailed categories / departments.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

---

3. The website provides interactive functions (auto drop-down list of categories, suggestions of key words when typing in search box, auto zoom in/out when mouse over pictures, etc.).

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

---

4. The website automatically suggests alternative products (which you may buy instead of the one you are browsing).

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

---

5. The website automatically suggests additional products (such as similar style products or accessories which you may buy together with the one you are browsing).

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |



« PREVIOUS NEXT »

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## Online Shopping Experience
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**Based on that particular transaction**, please pick a number on the 11-point scales to indicate how each of the following website features affected your **actual shopping experience** with this retail website and your **intention to purchase again** from this retail website.

On the 11-point scales,

-5 = This feature **strongly detracted from** my actual shopping experience with this retail website, or
This feature **strongly discouraged** me to purchase again from this retail website.

0 = This feature **did not affect** my actual shopping experience or my intention to purchase again.

+5 = This feature **strongly enhanced** my actual shopping experience with this retail website, or
This feature **strongly encouraged** me to purchase again from this retail website.

You may choose "**not applicable**" if the website did not provide the feature.

---

6. The website highlights products on special offers.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

---

7. The website enables you to filter / select a list of products by pre-set attributes (brand, colour, size, etc.).

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

---

8. The website enables you to sort a list of products into order (by price, by popularity, by relevance, etc.).

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

---

9. The website enables you to choose how many products to show on one page (20, 50, all, etc.).

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

---

10. The website enables you to compare the detailed specifications of selected products on one page.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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## Online Shopping Experience
## - a research project @ Warwick Business School



**Based on that particular transaction**, please pick a number on the 11-point scales to indicate how each of the following website features affected your **actual shopping experience** with this retail website and your **intention to purchase again** from this retail website.

On the 11-point scales,

-5 = This feature **strongly detracted from** my actual shopping experience with this retail website, or
This feature **strongly discouraged** me to purchase again from this retail website.

0 = This feature **did not affect** my actual shopping experience or my intention to purchase again.

+5 = This feature **strongly enhanced** my actual shopping experience with this retail website, or
This feature **strongly encouraged** me to purchase again from this retail website.

You may choose "**not applicable**" if the website did not provide the feature.

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11. The website enables you to save your address details with your account.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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12. The website enables you to save your payment details (credit / debit card, PayPal account, etc.).

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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13. The website enables you to make one-click / express payments using your saved address and payment details.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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14. The website provides you an option to make payment through a website that is not operated by your bank (PayPal, Google Checkout, NoChex, etc.).

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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15. The website accepts payments by telephone, post, at local stores, or through any other offline channels.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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**Based on that particular transaction**, please pick a number on the 11-point scales to indicate how each of the following website features affected your **actual shopping experience** with this retail website and your **intention to purchase again** from this retail website.

On the 11-point scales,

-5 = This feature **strongly detracted from** my actual shopping experience with this retail website, or
This feature **strongly discouraged** me to purchase again from this retail website.

0 = This feature **did not affect** my actual shopping experience or my intention to purchase again.

+5 = This feature **strongly enhanced** my actual shopping experience with this retail website, or
This feature **strongly encouraged** me to purchase again from this retail website.

You may choose "**not applicable**" if the website did not provide the feature.

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16. The website provides information sections (FAQs, Help, etc.) for you to find quick answers to questions.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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17. The website enables you to make enquiries by email or filling an online enquiry form.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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18. The website enables you to make enquiry by live chat (via typing) with customer service agents.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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19. The website provides an online forum where you can discuss (via typing) relevant issues with customer service agents as well as other customers.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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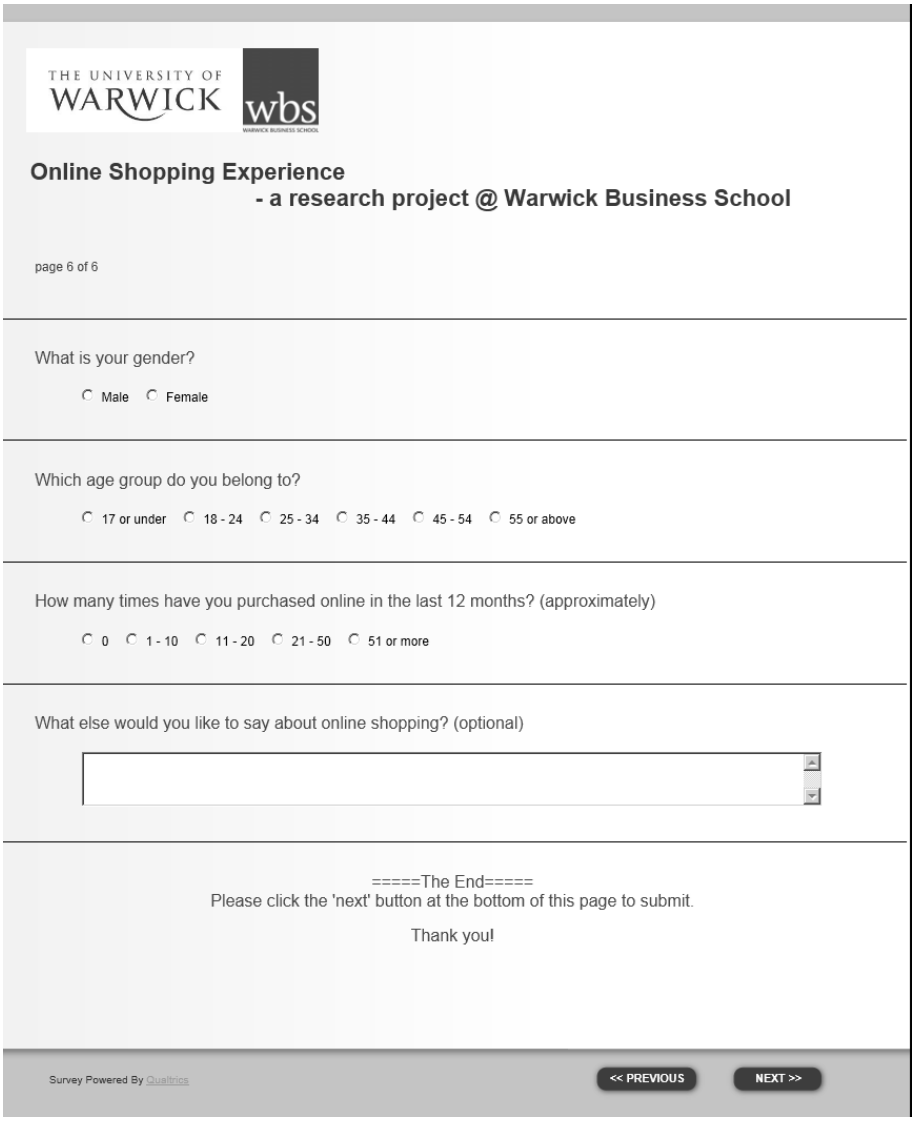
20. The website accepts enquiries by telephone, post, at local stores, or through any other offline channels.

| | not applicable | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Actual Shopping Experience | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Intention to Purchase Again | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |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page 6 of 6

What is your gender?

○ Male ○ Female

Which age group do you belong to?

○ 17 or under ○ 18 - 24 ○ 25 - 34 ○ 35 - 44 ○ 45 - 54 ○ 55 or above

How many times have you purchased online in the last 12 months? (approximately)

○ 0 ○ 1 - 10 ○ 11 - 20 ○ 21 - 50 ○ 51 or more

What else would you like to say about online shopping? (optional)

=====The End=====
Please click the 'next' button at the bottom of this page to submit.

Thank you!

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